INSTALLING AND DEPLOYING ADOBE® LIVECYCLE® ES4 FOR JBOSS®

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Chapter 1: About This Document

LiveCycle is an enterprise server platform that helps you automate and streamline business processes. LiveCycle comprises the following components:

- J2EE-based Foundation provides server capabilities and runtime environment
- Tools to design, develop, and test LiveCycle Applications
- Modules and Services are deployed on LiveCycle Server and provide functional services

For more information about the LiveCycle architecture and capabilities, see LiveCycle Overview.

This document is part of a larger documentation set available at LiveCycle Documentation page. It is advised that you start with the preparing guide and then move on to installation and configuration guide depending on whether you are performing a fresh installation (single server or cluster setup) or upgrading your existing LiveCycle deployment. For Turnkey deployment, which is only for evaluation purposes, see Installing and Deploying LiveCycle using JBoss Turnkey.

1.1 Who should read this document?

This guide provides information for administrators or developers who are responsible for installing, upgrading, configuring, administering, or deploying LiveCycle components. The information provided is based on the assumption that anyone reading this guide is familiar with J2EE application servers, operating systems, database servers, and web environments.

1.2 Conventions used in this document

The installation and configuration documentation for LiveCycle uses the following naming conventions for common file paths.

Name	Default value	Description
[LiveCycle root]	Windows: C:\Adobe\Adobe LiveCycle ES4 Linux and Solaris: /opt/adobe/adobe_livecycle_es4	The installation directory that is used for all LiveCycle modules. The installation directory contains subdirectories for LiveCycle Configuration Manager. This directory also includes directories related to third-party products.
[appserver root]	These installation locations are examples. Your installation location may be different. JBoss Application Server on Windows: C:\jboss\ JBoss Application Server on Linux: /opt/jboss/	The home directory of the application server that runs the services that are part of LiveCycle.

Name	Default value	Description
[dbserver root]	Depends on the database type and your specification during installation.	The location where the LiveCycle database server is installed.
[*lc_temp_dir*]	On Windows: C:\Adobe\Adobe LiveCycle ES4\tmp On Linux, UNIX and AIX: /opt/adobe/adobe_livecycle_es4/tmp	The temporary directory for LiveCycle server.
[CRX_home]	On Windows: C:\Adobe\Adobe LiveCycle ES4\crx-repository On Linux, UNIX and AIX /opt/adobe/adobe_livecycle_es4/crx-repository	The directory that is used for installing the CRX repository.

Most of the information about directory locations in this guide is cross-platform (all file names and paths are case-sensitive on non-Windows operating systems). Any platform-specific information is indicated as required.

1.3 Additional information

The resources in this table can help you learn more about LiveCycle.

For information about	See
General information about LiveCycle and the modules	LiveCycle Overview
LiveCycle modules	LiveCycle Modules
Other services and products that integrate with LiveCycle	Adobe Developer Connection
Installing Adobe® LiveCycle® Workbench 11	Installing Adobe LiveCycle Workbench 11
Preparing to Install LiveCycle	Preparing to Install LiveCycle (Single Server)
LiveCycle ES4 Upgrade Checklist and Planning	LiveCycle ES4 Upgrade Checklist and Planning
Troubleshooting LiveCycle	Troubleshooting LiveCycle
Performing administrative tasks for LiveCycle	LiveCycle Administration Help
All the documentation available for LiveCycle	LiveCycle documentation
Patch updates, technical notes, and additional information about this product version	Adobe Enterprise Support

Chapter 2: Introduction to Installation, Configuration, and Deployment Process

2.1 Installation, configuration, and deployment overview

Installing, configuring, and deploying LiveCycle involves the following processes:

- **Installing:** Install LiveCycle by running the installation program. Installing LiveCycle places all of the required files onto your computer, within one installation directory structure. The default installation directory is C:\Adobe\Adobe LiveCycle ES4 (Windows) or /opt/adobe/adobe_livecycle_es4 (non-windows); however, you can install the files to a different directory.
- **Configuring:** Configuring LiveCycle modifies various settings that determine how LiveCycle works. Assembling the product places all of the installed components into several deployable EAR and JAR files, according to your configuration instructions. Configure and assemble the components for deployment by running Configuration Manager. You can configure and assemble multiple LiveCycle modules at the same time.
- **Deploying:** Deploying the product involves deploying the assembled EAR files and supporting files to your application server on which you plan to run your LiveCycle. If you have configured multiple modules, the deployable components are packaged within the deployable EAR files. Components and LiveCycle archive files are packaged as JAR files.

  Note: *LiveCycle archive file use .lca file extension.*

- **Initializing the LiveCycle database:** Initializing the database to be used with LiveCycle creates tables for use with User Management and other components. Deploying any module that connects to the LiveCycle database requires you to initialize the LiveCycle database after the deployment process.

Before you begin to install and configure LiveCycle, ensure that you have prepared your environment as described in the applicable Preparing guides.

2.2 Selecting tasks for configuring and deploying

After you have installed LiveCycle, you can run Configuration Manager to:

- Configure LiveCycle modules in an EAR file for deploying to the application server or cluster of application servers
- Initialize LiveCycle database
- Deploy LiveCycle components
- Validate LiveCycle component deployment
- Configure LiveCycle components

2.3 LiveCycle installation and deployment list

The following list includes the steps that are required for installing LiveCycle by using the manual method. Your application server or cluster must be installed and configured before you perform the installation.

- Ensure that you have the required software installed and configured in the target environment.
- Ensure that you created and configured the application server in the target environment. You can choose to manually configure JBoss or use the Adobe pre-configured one.
- Run the installation program.
- Run Configuration Manager and select the Configure LiveCycle EARs task. This task configures and assembles LiveCycle.
- Deploy the EAR files to the application server or cluster. You must do it manually.
- Run Configuration Manager to initialize the LiveCycle database and deploy LiveCycle component files.
- Access Administration Console and User Management.
- (Optional) Configure LDAP access.

Chapter 3: Installing LiveCycle modules

3.1 Before you begin

3.1.1 Installation overview

Before you install the modules, ensure that your environment includes the software and hardware that is required to run LiveCycle. You should also understand the installation options and have the environment prepared as required. For more information, see the Preparing to Install (Singler Server or Server Cluster) or Preparing to Upgrade guide. The complete LiveCycle documentation is available at http://www.adobe.com/go/learn_lc_documentation_11.

LiveCycle also provides a command line interface (CLI) for the installation program. See "Appendix - Install Command Line Interface" on page 55 for instructions on using the CLI. There is also a CLI for Configuration Manager. See "Appendix - Configuration Manager Command Line Interface" on page 58. These CLIs are intended to be used by advanced users of LiveCycle, in server environments that do not support the use of the graphical user interface of the installation program or of Configuration Manager, or for users who wish to implement batch (non-interactive) installation capabilities.

3.1.2 Checking the installer

Observe the following best practices with the installer files before you begin the installation process.

Check the DVD installation media

Ensure that the installation media that you received is not damaged. If you copy the installation media contents to the hard disk of your computer where you are installing LiveCycle, ensure that you copy the entire DVD contents on to the hard disk. To avoid installation errors, do not copy the DVD install image to a directory path that exceeds the Windows maximum path length limit.

Install LiveCycle either by using a local copy of the installation files or directly from the DVD. The installation could fail when LiveCycle is installed over the network. Also, do not use special characters in the local path (for example, the character '#').

Check the downloaded files

If you downloaded the installer from the Adobe web site, verify the integrity of the installer file using the MD5 checksum. Do one of the following to calculate and compare the MD5 checksum of the downloaded file with the checksum published on the Adobe download web page:

- **Linux:** Use the `md5sum` command
- **Solaris:** Use the `digest` command
- **Windows:** Use a tool such as WinMD5

Expand the downloaded archive files

If you downloaded the ESD from the Adobe web site, extract the entire lces_server_11_0_0_jboss_all_win.zip (Windows) or lces_server_11_0_0_jboss_all_unix.tar.gz (Linux or Solaris) archive file to your computer. For Solaris, use the `gunzip` command to extract the .gz file.

Note: *Be sure to keep the directory hierarchy unchanged from the original ESD file.*

3.2 Installation considerations

3.2.1 Installation paths

To successfully install, you need read, write, and execute permissions on the installation directory. The following installation directories are the defaults; however, you can specify a different directory as required:

- (Windows) C:\Adobe\Adobe LiveCycle ES4
- (Linux or Solaris) /opt/adobe/adobe_livecycle_es4

Important: *When installing LiveCycle, do not use double byte or extended latin characters (such as àâçéèêëîïôùûÄÖßÜ) in the installation path.*

Important: (Windows only) *The LiveCycle installation directory path must not contain any non-ASCII characters (for example, international characters such as é or ñ), otherwise the JBoss Service for Adobe LiveCycle ES4 will fail to start.*

When you are installing the modules on UNIX-based systems, you must be logged in as the root user to successfully install the modules to the default location, which is /opt/adobe/adobe_livecycle_es4. If you are logged in as a non-root user, change the installation directory to one that you have permissions (read-write-execute privileges) for. For example, you can change the directory to /home/*[username]*/adobe/adobe_livecycle_es4.

Note: *On a UNIX-like system, when you copy/download files from the source (installation media), install.bin might lose the executable permissions. Ensure that you restore the write-execute permissions after copying/downloading the files.*

On Windows, you must have administrator privileges to install LiveCycle.

3.2.2 Temporary directories

Temporary files are generated in the temp directory. In certain instances, the generated temporary files may remain after the installer is closed. You can remove these files manually.

When installing on Linux, the installation program uses the logged-in user's home directory as a temporary directory for storing files. As a result, messages such as the following text may appear in the console:

```
WARNING: could not delete temporary file /home/<username>/ismp001/1556006
```

When you complete the installation, you must manually delete the temporary files from the following directories:

- (Windows) TMP or TEMP path as set in the environment variables
- (Linux or Solaris) Logged-in user’s home directory

On UNIX-based systems, a non-root user can use the following directory as the temporary directory:

- (Linux) /var/tmp or /usr/tmp
- (Solaris) /var/tmp or /usr/tmp

3.2.3 Installing on a Windows staging platform for Linux or UNIX

LiveCycle can be installed and configured on Windows for deployment on a Linux or UNIX platform. You can use this functionality for installing on a locked-down Linux or UNIX environment. A locked-down environment does not have a graphical user interface installed. For the Linux or UNIX platform, the installation program installs binaries that are used by Configuration Manager to configure the product.

The computer running Windows can then be used as a staging location for the deployable objects, which can be copied to a Linux or UNIX computer for deployment to the application server. The application server on the Windows-based computer, and the Linux or UNIX target computer on which you want to install LiveCycle must be the same.

3.2.4 Configuring the JAVA_HOME environment variable

The JAVA_HOME environment variable must point to the Java SDK for your application server as outlined in the preparing guide. See Preparing to Install LiveCycle (Single Server) or Preparing to Install LiveCycle (Server Cluster) for more information

3.2.5 General installation notes

- On Windows, improve the speed of installation by disabling any on-access virus scanning software during installation.
- If you are installing on UNIX-based systems and are not installing directly from a release DVD, set executable permissions on the installation file.
- To avoid permission issues during deployment, ensure that you run the LiveCycle installer and Configuration Manager as the same user who will run the application server.
- If you are installing on UNIX-based computers, the installation directory you specify should not contain any spaces.
- If errors occur during installation, the installation program creates the install.log file, which contains the error messages. This log file is created in the *[LiveCycle root]*/log directory.
- Ensure that the `JAVA_HOME` environment variable points to the directory that contains a compatible JDK. See the supported platform combinationsfor more information.

3.3 Installing LiveCycle

1 Start the installation program:

- (Windows) Navigate to the \server\Disk1\InstData\Windows_64\VM directory on the installation media or folder on your hard disk where you copied the installer. Right-click the `install.exe` file and select Run as administrator.

  Note: *32-bit version of LiveCycle is also available. Navigate to the corresponding directory and choose the installation file to launch the installer. However, note that the 32-bit version is supported only for development or evaluation purposes, and not for a production environment.*

- (Non-Windows) Navigate to the appropriate directory, and from a command prompt, type `./install.bin`.
  - (Linux) /server/Disk1/InstData/Linux/NoVM
  - (Solaris) /server/Disk1/InstData/Solaris/NoVM

2 When prompted, select the language for the installation to use and click **OK**.

3 On the Introduction screen, click **Next**.

4 If you have a previous version of LiveCycle ES2, ADEP, or LiveCycle ES3 installed on the computer where you are running the installer, the Preparation for Upgrade screen appears.

Note: *If you are performing an out-of-place upgrade on a new machine, this screen is not shown.*

- **Prepare to upgrade existing installation to Adobe LiveCycle ES4:**

  Do not select this option if you are performing a fresh installation.

- **Install Adobe LiveCycle ES4:** Installs LiveCycle afresh.

Select **Next** to continue.

5 On the Choose Install Folder screen, accept the default directory or click **Choose** and navigate to the directory where you intend to install LiveCycle, and then click **Next**. If you type the name of a directory that does not exist, it is created for you.

   Click Restore Default Folder to restore the default directory path.

6 On the Choose Installation Type screen, select **Custom** > **Manual**, and click **Next**.

   For turnkey installation, see Installing and Deploying LiveCycle using JBoss Turnkey.

7 **(Windows only)** On the Manual Installation Options screen, select the target deployment option and click **Next**:

   - **Windows (Local):** Select this option if you are installing and deploying LiveCycle on the local server.
   - **Staged (Installed on Windows, targeting remote systems):** Select this option if you plan to use Windows as a staging platform for your deployment and then select the target operating system on the remote server. You can select a UNIX operating system as the target for deployment even if you are installing on Windows. (See "3.2.3 Installing on a Windows staging platform for Linux or UNIX" on page 6.)

8 Read the Adobe LiveCycle ES4 License Agreement, select **I accept** to accept the terms of the license agreement and then click **Next**. If you do not accept the license agreement, you cannot continue.

9 On the Pre-Installation Summary screen, review the details and click **Install**. The installation program displays the progress of the installation.

10 Review the Release Notes information and click **Next**.

11 Review the details on the Install Complete screen.

12 The **Start LiveCycle Configuration Manager** checkbox is selected by default. Click **Done** to run the Configuration Manager.

   Note: *To run Configuration Manager later, deselect the* ***Start LiveCycle Configuration Manager*** *option before you click* ***Done****. You can start Configuration Manager later using the appropriate script in the [LiveCycle root]/configurationManager/bin directory. See the Configuring LiveCycle For Deployment chapter in this guide.*

3.4 Next steps

You must now configure LiveCycle for deployment. You can also choose to run Configuration Manager later by using the ConfigurationManager.bat or ConfigurationManager.sh file located in *[LiveCycle root]*\configurationManager\bin.

Chapter 4: Configuring LiveCycle for deployment

4.1 Considerations when configuring and deploying LiveCycle

4.1.1 General Considerations

- For IPv6, run IPv6 LiveCycle Configuration Manager. For detailed information, see LiveCycle IPv6 support section in prepare to install guide.
- You can override the default font for the Configuration Manager by adding the following JVM argument in `[LiveCycle root]\configurationManager\bin\ConfigurationManager.bat` (Windows) or `[LiveCycle root]\configurationManager\bin\ConfigurationManager.sh` (Linux, UNIX):

  ```
  -Dlcm.font.override=<FONT_FAMILY _NAME>
  ```

  For example:

  ```
  -Dlcm.font.override=SansSerif
  ```

  Restart the Configuration Manager after adding the JVM argument.
- During configuration, if you must reset the data in Configuration Manager by using the Reset to Default option, ensure that you relaunch the Configuration Manager. Otherwise, you may encounter some missing configuration screens.
- During configuration, you must provide the location of the JDBC drivers for your database. The Oracle, SQL Server, and DB2 drivers are in the *[LiveCycle root]*/lib/db/*[database]* directory. For MySQL, download and install the necessary JDBC drivers.

  If you have manually configured JBoss, the database drivers have to be downloaded and copied in the *[appserver root]*/server/<*profile_name*>/lib
- Global Document Storage (GDS) directory: Specify the GDS directory that meets the requirements outlined in the Preparing to Install (Single Server or Server Cluster). For latest documentation, see http://www.adobe.com/go/learn_lc_documentation_11.

4.1.2 CLI versus GUI versions of Configuration Manager

This section describes the GUI version of Configuration Manager. For instructions about using the command line interface (CLI) version of Configuration Manager, see "Appendix - Configuration Manager Command Line Interface" on page 58.

LiveCycle configuration task	Configuration Manager GUI	Configuration Manager CLI	Manual
Configure LiveCycle	Yes	Yes	No
Initialize LiveCycle database	Yes	Yes	No
Validate LiveCycle Server connection	Yes	Yes	No

LiveCycle configuration task	Configuration Manager GUI	Configuration Manager CLI	Manual
Deploy LiveCycle components	Yes	Yes	No
Validate LiveCycle component deployment	Yes	Yes	Yes
Configure LiveCycle components	Yes	Yes	Yes

4.1.3 Considerations for JBoss application server

The **Configure Application Server**, **Validate Application Server Configuration,** and **Deploy LiveCycle EARs** tasks are not available for JBoss.

You must configure JBoss and deploy the LiveCycle EARs manually as described in the "Deploying LiveCycle to JBoss" on page 16.

4.1.4 Set the date, time, and time zone

Setting the date, time, and time zone on all servers connected to your LiveCycle environment will ensure that time-dependent modules, such as Adobe® LiveCycle® Digital Signatures 11 and Reader Extensions 11, function correctly. For example, if a signature appears to have been created in the future, it will not validate.

Servers that require time synchronization are database servers, LDAP servers, HTTP servers and J2EE servers (Application servers).

4.2 LiveCycle pre-configuration tasks

Note: *Press **F1** in Configuration Manager to view Help information for the screen you are viewing. You can view the configuration progress at any time by clicking View Progress Log.*

1. If you did not start Configuration Manager automatically from the installation program, navigate to the *[LiveCycle root]*/configurationManager/bin directory and run the ConfigurationManager.bat/sh script.
2. If prompted, select a language for Configuration Manager to use and click **OK.**
3. On the Welcome screen, click **Next**.
4. Do not select any option on the Upgrade Task Selection screen and click **Next**.
5. On the Modules screen, select Adobe LiveCycle ES4 modules you wish to configure and click **Next**.

   Note: *Some modules have technical dependencies on other modules for proper configuration and functioning. Configuration Manager displays a dialog and does not allow to proceed further if mutually dependent modules are not selected. For example, you must select Adobe LiveCycle Forms, Adobe LiveCycle Output, and Content Repository modules if you are configuring Correspondence Management Solution.*
6. On the Task Selection screen, select all the tasks you want to perform and click **Next**.

   Note: *Tasks Configure Application Server, Validate Application Server, and Deploy LiveCycle ES4 EAR files are not available for JBoss application server.*

4.3 Configuring and deploying LiveCycle

Note: *Press **F1** in Configuration Manager to view Help information for the screen you are viewing.*

Configuring LiveCycle

1 On the Configure LiveCycle ES4 (1 of 5) screen, click **Configure** and click **Next** when done.

2 On the Configure LiveCycle ES4 (2 of 5) screen, set the directories that LiveCycle will use to access fonts and then click **Next.**

*Click **Edit configuration** to change any values on this screen. This button is not available when the Configuration Manager is run for the first time, but is available on the second and subsequent runs of the Configuration Manager.*

- (Optional) To change the default location of the **Adobe server fonts directory**, type the path or browse to the directory.
- To change the default location of the **Customer fonts directory,** click **Browse** or specify a new location for your customer fonts.

  Note: *Your right to use fonts provided by parties other than Adobe is governed by the license agreements provided to you by such parties with those fonts, and is not covered under your license to use Adobe software. Adobe recommends that you review and ensure that you are in compliance with all applicable non-Adobe license agreements before using non-Adobe fonts with Adobe software, particularly with respect to use of fonts in a server environment.*
- (Optional) To change the default location of the **System fonts directory**, type the path or browse to the directory. To add more directories to the list, click **Add**.
- (Optional) To enable FIPS, ensure that Enable **FIPS** is selected. Select this option only if you require the Federal Information Processing Standards (FIPS) to be enforced.

3 Click **Browse** on the Configure LiveCycle ES4 (3 of 5) screen to specify the **Location of the temporary directory.**

Note: *Ensure that the temporary directory is on the local file system. LiveCycle does not support a temporary directory at a remote location.*

Note: *If you do not specify the temporary directory, the default system-configured temp location is used.*

4 On the Configure LiveCycle ES4 (4 of 5) screen, click **Browse** to specify the path for the Global Document Storage (GDS) directory.

Note: *If you leave the GDS directory field empty, LiveCycle will create the directory in a default location in the application server directory tree. After you finish the configuration steps, you can access the location from Administration Console > Settings > Core System Settings > Configurations.*

5 On the Configure Persistent Document Storage (5 of 5) screen, select the option for persistent document storage in addition to the GDS directory. Select one of the following:

- **Use GDS**: Use the file system-based GDS for all persistent document storage. This option provides the best performance, and a single location for GDS.
- **Use database**: Use the LiveCycle database for storing the persistent documents and long-lived artifacts. However, the file-system based GDS is also required. Using the database simplifies backup and restore procedures.

Click **Configure** to configure the LiveCycle EARs with this directory information and, after the configuration is complete, click **Next**.

Configuring Acrobat for PDF Generator

❖ **(Windows only)** On the Configure Acrobat For LiveCycle PDF Generator screen, click **Configure** to run the script that will configure Adobe Acrobat and required environment settings. Click **Next** when complete.

Note: *This screen will perform the desired configuration only when Configuration Manager is running locally. You must have Adobe Acrobat XI Pro already installed or this step will fail.*

LiveCycle Configuration Summary

❖ On the Configure LiveCycle ES4 Summary screen, click **Next**. Configured archives are placed in the *[LiveCycle root]*/configurationManager/export directory.

Configure CRX

❖ The CRX Configuration screen allows you to configure the CRX repository and install it into the LiveCycle Core EAR file. On this screen, specify the path to the repository and click **Configure** to create the required repository files at the specified location. If you are using a custom path for the repository, ensure that the file system already contains custom directory.

Note: (Non-turnkey only) *If your LiveCycle server is running remotely, select* ***Server is running on remote host****, and specify the path to the repository on the remote host.*

Click **Next** to continue.

Note: *Once the packages are configured, you cannot remove them by re-running the Configuration Manager. For clean uninstallation of deployed packages, you need to uninstall and delete the packages using Package Manager.*

(Remote host only) CRX Configuration Summary

❖ For a remote deployment, copy the content from the [*LiveCycle root*]/configurationManager/export/crx-quickstart/ directory to the location on the remote host you specified on the CRX Configuration screen.

Deploying LiveCycle EARs

❖ Without exiting Configuration Manager, manually deploy the LiveCycle EAR files to JBoss by copying the following files from the *[LiveCycle root]*/configurationManager/export directory to directories as specified:

- adobe-livecycle-native-jboss-*[OS]*.ear
- adobe-livecycle-jboss.ear
- adobe-workspace-client.ear (Adobe® LiveCycle® Process Management 11 only)

Manually-configured JBoss *[appserver root]*/server/standard/deploy

Adobe-preconfigured JBoss on single server *[appserver root]*/server/lc_<db name>/deploy

You can optionally deploy the Adobe® LiveCycle® Forms Standard 11, Adobe® LiveCycle® Output 11, Adobe® LiveCycle® Mobile Forms, and Assembler IVS EARs as well.

To create publish instance for Correspondence Management, deploy `adobe-livecycle-cq-publish.ear`. Ensure that `adobe-livecycle-cq-publish.ear` is deployed on a different server. Do not deploy `adobe-livecycle-cq-publish.ear` on LiveCycle server. For detailed information about configuring the publish instance, see "6.3.2 Configure the Publish instance" on page 23

Note: *The data source definition files have to be modified to point to the database server and database. For more information, see Appendix - Manually Configuring Data Sources.*

Important: *Deploying the IVS EAR files to a production environment is not recommended.*

Start JBoss to ensure the LiveCycle applications start successfully and return to Configuration Manager.

Initializing LiveCycle database

1 On the LiveCycle ES4 Database Initialization screen, verify that the hostname and port number provided for your application server is correct and then click **Initialize**. The database initialization task creates tables in the database, adds default data to the tables, and creates basic roles in the database. When the initialization has completed successfully, click **Next**. Restart the application server manually when you are prompted to do so.

Note: *Initialize the database against only one server of the cluster. Subsequent steps are performed only on initialized server.*

2 On the LiveCycle ES4 Information screen, enter **LiveCycle ES4 User ID** and **Password** whose default values are *administrator* and *password* respectively.

Click **Verify Server Connection**, and when complete, click **Next**.

Note: *The server information that appears on this screen represents default values for the deployment.*

Verifying the server connection helps narrow troubleshooting in case failures occur in the deployment or validation. If the connection test passes but deployment or validation fails in the next few steps, connectivity issues can be eliminated from the troubleshooting process.

Deploying Central Migration Bridge Service

❖ On the Central Migration Bridge Service Deployment Configuration screen, if applicable, select the **Include Central Migration Bridge Service** in deployment option and then click **Next**.

Deploying LiveCycle components

1 On the LiveCycle ES4 Component Deployment screen, click **Deploy**. The components that are deployed at this time are Java archive files that plug into the LiveCycle service container for purposes of deploying, orchestrating, and executing services. When the deployment has completed successfully, click **Next**.

2 On the LiveCycle ES4 Component Deployment Validation screen, click **Validate**. When the validation has completed successfully, click **Next**.

Configuring LiveCycle components

❖ On the Configure LiveCycle Components screen, select the tasks to run with Configuration Manager, and click **Next**.

LiveCycle Server JNDI information

❖ On the LiveCycle ES4 Server JNDI Information screen, enter the host name, port number, and JBoss client jar location for the JNDI server. Press F1 for more information. Click **Verify Server Connection** to ensure that Configuration Manager can connect to the JNDI server. Click **Next** to continue.

Connector for EMC Documentum

Note: *In case of a remote LiveCycle deployment, you cannot configure the Connector for EMC Documentum using Configuration Manager.*

1 On the Specify Client for EMC Documentum screen, select **Configure Connector for EMC Documentum Content Server**, and specify the following settings. Enter the details, click **Verify**, and when complete, click **Next** to continue.

- **Choose EMC Documentum Client Version:** Select the client version to use with the EMC Documentum Content Server.
- **EMC Documentum Client Installation Directory Path:** Click **Browse** to select the directory path.

  Note: *Configure Documentum 6.7 manually, LCM does not contains support for Documentum 6.7.*

2 On the Specify EMC Documentum Content Server Settings screen, enter the EMC Documentum Server details, and then click **Next**. Press F1 for information about the details you need to enter.

3 On the Configure Connector for EMC Documentum screen, click **Configure Documentum Connector**. When completed, click **Next**.

4 On the Required Manual Configurations for Connector for EMC Documentum screen, review and perform the manual steps listed and then click **Next**.

Connector for IBM Content Manager

Note: *In case of a remote LiveCycle deployment, you cannot configure the Connector for IBM Content Manager using Configuration Manager.*

1 On the Specify Client for IBM Content Manager screen, select **Configure Connector for IBM Content Manager**, and enter a value for the IBM Content Manager Client Installation Directory Path. Click **Verify** and when complete, click **Next** to continue.

2 On the Specify IBM Content Manager Server Settings screen, enter the details of the IBM Content Manager Server, and click **Next**.

3 On the Configure Connector for IBM Content Manager screen, click **Configure IBM Content Manager Connector**. When complete, click **Next**.

4 On the Required Manual Configurations for Connector for IBM Content Manager screen, review and perform the manual steps listed and then click **Next**.

Connector for IBM FileNet

Note: *In case of a remote LiveCycle deployment, you cannot configure the Connector for IBM FileNet using Configuration Manager.*

1 On the Specify Client for IBM FileNet screen, select **Configure Connector for IBM FileNet Content Manager**, and specify the following settings.

- **Choose IBM FileNet Client Version:** Select the client version that you want to use with the IBM FileNet Content Server.
- **IBM FileNet Client Installation Directory Path:** Click **Browse** to select the directory path.

  Note: *The validation of IBM FIleNet may fail if there are special characters, such as hyphen (-), underscore (_), comma (,), or dot (.) in the directory name containing the IBM FileNet client.*

Click **Verify**, and when complete, click **Next** to continue.

2 On the Specify IBM FileNet Content Server Settings screen, enter the required details, and click **Next**.

3 On the Specify Client for IBM FileNet Process Engine screen, enter the required details, and click **Verify**. When complete, click **Next**.

4 On the Specify IBM FileNet Process Engine Server Settings screen, enter the required details and click **Next**.

5 On the Configure Connector for IBM FileNet screen, click **Configure FileNet Connector**. When complete, click **Next**.

6 On the Required Manual Configurations for Connector for IBM FileNet screen, review and perform the manual steps listed and then click **Next**.

Connector for Microsoft SharePoint

Note: *In case of a remote LiveCycle deployment, you cannot configure the Connector for Microsoft SharePoint using Configuration Manager.*

On the Configure Adobe LiveCycle ES4 Connector for Microsoft SharePoint screen, do one of the following tasks:

- Deselect the **Configure Adobe LiveCycle ES4 Connector for Microsoft SharePoint** option to manually configure Microsoft Sharepoint later, and then click **Next**.
- Leave the **Configure Adobe LiveCycle ES4 Connector for Microsoft SharePoint** option selected. Enter the required values, and then click Configure SharePoint Connector. When complete, click **Next**.

Note: *You can skip this step if you want to configure the Connector for Microsoft SharePoint later using Administration Console.*

Configuring LiveCycle Server for native file conversions

❖ **(PDF Generator only)** On the **Admin user credentials for native PDF conversions** screen, enter the user name and password of a user with administrative privileges on the server computer, and then click **Add user.**

Note: *You must add at least one administrative user for Windows 2008 Server. On Windows 2008 Server, User Account Control (UAC) must be disabled for the users you add. To disable UAC, click* ***Control Panel*** *>* ***User Accounts*** *>* ***Turn User Account Control on or off*** *and deselect Use User Account Control (UAC) to help protect your computer, then click* ***OK****. Restart the computer to apply these changes.*

System readiness test for PDF Generator

❖ On the **Document Services PDF Generator System Readiness Test** screen, click **Start** to validate if the system has been appropriately configured for PDF Generator. Review the System Readiness Tool Report and click **Next.** Note that the system readiness test fails if LiveCycle is deployed on a remote machine.

Configuring Reader Extensions

❖ On the Reader Extensions Credential Configuration screen, specify the details that are associated with the Reader Extensions credential that activates the module services:

Note: *You can skip this step at this time by selecting* ***Configure later using Administration Console****. You can configure the Reader Extensions credential by using Administration Console after you complete the deployment. (After logging in to Administration Console, click* ***Home*** *>* ***Settings*** *>* ***Trust Store Management*** *>* ***Local Credentials****.)*

Click **Configure** and then click **Next**.

Summary, and Next Steps

❖ Review the Configuration Manager task summary list and choose the appropriate options:

- Select Launch Next Steps to view information about LiveCycle users and administrative interfaces to launch an html page containing step-by-step instructions to start and use LiveCycle.

Click **Finish** to exit the Configuration Manager

Chapter 5: Deploying LiveCycle to JBoss

This chapter describes how to deploy LiveCycle to JBoss Application Server.

5.1 About deploying LiveCycle modules

Before you deploy LiveCycle, ensure that you completed these tasks:

- Installed the required software and files, and know the location of the directories you will be working with. If you did not complete this task, see Preparing to Install LiveCycle (Single Server) or Preparing to Install LiveCycle (Server Cluster), as applicable.
- Run Configuration Manager to configure and assemble LiveCycle modules according to your system and application server requirements. To add a module to your deployment, you can run Configuration Manager to make the changes and then redeploy the updated EAR file.

If you are deploying LiveCycle for the first time, initialize the database by using Configuration Manager after you deploy the product.

If you are using an external web server, see your web server documentation for information about the configuration that is required to allow access to the application server.

5.2 Summary of deployable components

During the deployment process, you need to deploy the following components for LiveCycle:

- adobe-livecycle-native-jboss-*[OS]*.ear
- adobe-livecycle-jboss.ear
- adobe-workspace-client.ear (Process Management only)

After LiveCycle is configured with Configuration Manager (required), these files are located in the *[LiveCycle root]*/configurationManager/export/ directory.

5.3 Deploying to JBoss Application Server

Deploy LiveCycle modules to JBoss Application Server by copying the deployable components to the deploy directory. JBoss Application Server can be running or stopped when you copy the files to the directory. After you copy the files, start or restart the server to ensure that the services start correctly.

To deploy LiveCycle modules to JBoss Application Server:

- Copy the following files from the *[LiveCycle root]*/configurationManager/export directory to the following directory: (Manually-configured JBoss) *[appserver root]*/server/all/deploy or (Adobe-preconfigured JBoss) *[appserver root]*/server/lc_<db-name>/deploy:
  - adobe-livecycle-native-jboss-*[OS]*.ear

- adobe-livecycle-jboss.ear
- adobe-workspace-client.ear (Process Management only)

You can optionally deploy the Adobe® LiveCycle® Forms Standard 11, Adobe® LiveCycle® Output 11, Adobe® LiveCycle® Mobile Forms, and Assembler IVS EARs as well.

To create publish instance for Correspondence Management, deploy `adobe-livecycle-cq-publish.ear`. Ensure that `adobe-livecycle-cq-publish.ear` is deployed on a different server. Do not deploy `adobe-livecycle-cq-publish.ear` on LiveCycle server. For detailed information about configuring the publish instance, see "6.3.2 Configure the Publish instance" on page 23

Note: *The data source definition files have to be modified to point to the database server and database. For more information, see Appendix - Manually Configuring Data Sources.*

Important: *Deploying the IVS EAR files to a production environment is not recommended.*

Chapter 6: Post-deployment tasks

6.1 General tasks

6.1.1 Perform a system image backup

After LiveCycle is installed and deployed into production areas and before the system is live, it is recommended that you perform a system image backup of the servers on which LiveCycle is implemented. Also take backup of CRX repository.

The LiveCycle database, GDS directory, and application servers must be part of this backup. This is a complete system backup that you can use to restore the contents of your computer if your hard drive or entire computer stops working. See the LiveCycle Backup and Recovery topic in Administration Help .

6.1.2 Restart the application server

When you first deploy LiveCycle, the server is in a deployment mode in which most modules are in memory. As a result, the memory consumption is high and the server is not in a typical production state. You must restart the application server to get the server back into a clean state.

Note: *When you upgrade the LiveCycle Server or deploy a Service pack, ensure that you delete the [Jboss_root]\server\<server name>\work and[Jboss_root]\server\<server name>\tmp folders before restarting the application server.*

6.1.3 Verify the deployment

You can verify the deployment by logging in to Administration Console. If you log in successfully, then LiveCycle is running on the application server and the default user is created in the database. To verify the CRX repository deployment, access the CRX welcome page.

You can review the application server log files to ensure that components were deployed correctly or to determine the cause of any deployment issues you may encounter.

6.1.3.1 Accessing LiveCycle Administration Console

Administration Console is the web-based portal for accessing a variety of configuration pages where you can set run-time properties that control the way LiveCycle operates. When you log in to Administration Console, you can access User Management, Watched Folder, and Email client configuration, and administrative configuration options for other services. Administration Console also provides access to Applications and Services, which administrators use for managing archives and deploying services to a production environment.

The default user name and password for logging in is *administrator* and *password*. After you log in the first time, access User Management and change the password.

Before you access Administration Console, LiveCycle must be deployed and running on your application server.

For information about using Administration Console, see Administration Help.

1 Type the following URL in a web browser:

`http://[hostname]:[port]/adminui`

For example: `http://localhost:8080/adminui`

2 If you have upgraded to LiveCycle, enter the same administrator user name and password as that of your previous LiveCycle installation. In case of a fresh installation, enter the default user name and password.

3 After you log in, click **Services** to access the service administration pages or click **Settings** to access the pages on which you can administer settings for different modules.

6.1.3.2 Change the default password of LiveCycle Administrator

LiveCycle creates one or more default users during the installation. The password for these users is in the product documentation and is publicly available. You must change this default password, depending on your security requirements.

The LiveCycle administrator user password is set to "password" by default. You must change it in Administration Console > Settings > User Management.

Also, it is recommended to change the default password for CRX Administrator.

For detailed information, see Change the default administrator password.

6.1.3.3 Accessing CQ Welcome Page

CQ welcome page is the web-based portal for accessing various CQ components, administration, deployment and development tools. The default user name and password for logging in is administrator and password (same as LiveCycle Administrator).

Access the welcome page using the following steps:

1 Type the following URL in a web browser:

```
http://[hostname]:[port]/lc/welcome
```

2 Enter the same administrator user name and password as mentioned above.

3 After you log in, you can access various components, administration, deployment and development UIs.

6.1.3.4 Accessing OSGi Management Console

In CQ, components are in form of OSGi bundles which are deployed to Apache Felix OSGi container. OSGi console provides a way to manage OSGi bundles and services configurations. The default user name and password for logging in is admin and admin (same as CRX Administrator).

Access the OSGi Management console using the following steps:

1 Type the following URL in a web browser:

```
http://[hostname]:[port]/lc/system/console
```

2 Enter the same administrator username and password as mentioned above.

3 After you log in, you can access various components, services, bundles and other configurations.

6.1.3.5 Change CQ Administrator default password

CQ embedded within LiveCycle has two administrator users as mentioned below.

- **Super Administrator (administrator)**: The Super Administrator user can access various CQ/CRX UIs and perform admin operations. The default username and password are same as LiveCycle Administrator, **administrator/password**. This user doesn't have access to OSGi Management Console. The default password of this user can be changed using LiveCycle Administrator console only as mentioned in section **Change default LiveCycle password**. The changed password will be applicable for both LiveCycle and CQ.

- Administrator (admin): This user can access to OSGi console in addition to CQ/CRX UIs and has administrator privileges. The default username and password for the user are **admin/admin**. To change the default password follow the below mentioned steps:

  1 Type the following URL in a web browser.

  ```
  http://[hostname]:[port]/lc/libs/granite/security/content/admin.html
  ```

  2 Login using following credential:

  Username: admin

  Password: admin.

  3 Search for user **Administrator**.

  4 Click on the user in left pane, the user details is displayed in the right pane.

  5 Click on **Edit** icon in the right pane.

  6 On the edit page in the right pane, provide new password in the **New Password** field and current password in **Your Password** field.

  7 Click **Save** icon in the right pane.

  8 Re-login using the changed password to verify.

6.1.3.6 View the log files

Events, such as run-time or startup errors, are recorded to the application server log files. If you have problems deploying to the application server, you can use the log files to help you find the problem. You can open the log files by using any text editor.

Log files, in case of manually-configured JBoss, are located at:

- **(Standalone JBoss)***[appserver root]*/server/standard/logs directory
- **(Cluster)***[appserver root]*/server/all/logs directory

Log files, in case of Adobe-preconfigured JBoss, are located at:

- **(Standalone)***[appserver root]*/server/lc_<dbname>/logs directory
- **(Cluster)***[appserver root]*/server/lc_<dbname>_cl/logs directory

The log files are:

- *server*.log
- *boot*.log

Following CRX log files are located at [*CRX_home*]/

- error.log
- audit.log
- access.log
- request.log
- update.log

6.2 Accessing module web applications

After LiveCycle is deployed, you can access the web applications that are associated with the following modules:

- Reader Extensions
- Adobe® LiveCycle® Workspace 11

  Note: *The Flex Worksapce is deprecated for AEM forms. It is available for the LiveCycle ES4 release.*
- HTML Workspace
- User management
- Correspondance management
- PDF Generator web application
- Adobe® LiveCycle® PDF Generator 11
- Adobe® LiveCycle® Rights Management 11

After accessing the web applications by using the default administrator permissions to ensure that they are accessible, you can create additional users and roles so that others can log in and use the applications. (See Administration Help.)

6.2.1 Access the Reader Extensions web application

Note: *You must apply a Reader Extensions credential and apply the user roles for a new user. (See "Configuring credentials for use with Reader Extensions" in LiveCycle Administration Help.)*

1 Open a web browser and enter this URL:

```
http://[hostname]:[port]/ReaderExtensions
```

2 Log in using the user name and password for LiveCycle.

Note: *You must have administrator or superuser privileges to log in. To allow other users to access the Reader Extensions web application, you must create the users in User Management and grant them the Reader Extensions Web Application role.*

6.2.2 Access Workspace

1 Open a web browser and enter this URL:

```
http://[hostname]:[port]/workspace
```

2 Log in using the user name and password for LiveCycle.

Note: *The Flex Worksapce is deprecated for AEM forms. It is available for the LiveCycle ES4 release.*

6.2.3 Access HTML Workspace

1 Open a web browser and enter this URL:

```
http://[hostname]:[port]/lc/ws
```

2 Log in using the user name and password for LiveCycle.

6.2.4 Access Forms Manager

1 Open a web browser and enter this URL:

`http://[hostname]:[port]/lc/fm`

2 Log in using the user name and password for LiveCycle.

6.2.5 Access PDF Generator Web Application

1 Open a web browser and enter this URL:

`http://[hostname]:[port]/pdfgui`

2 Log in using the user name and password for LiveCycle.

6.2.6 Access Rights Management

You must create a user with the Rights Management End User role in User Management and log in to the Rights Management administrator or end-user applications by using the login information that is associated with that user.

Note: *The default administrator user cannot access the Rights Management end-user web application but you can add the appropriate role to its profile. You can create a new user or modify an existing user through Administration Console.*

Access the Rights Management end-user web application

❖ Open a web browser and enter this URL:

`http://[hostname]:[port]/edc`

Access the Rights Management administration web application

1 Open a web browser and enter this URL:

`http://[hostname]:[port]/adminui`

2 Click **Services** > **LiveCycle Rights Management 11**.

For information about setting up users and roles, see Administration Help.

Assign the Rights Management End User role

1 Log in to Administration Console. (See "6.1.3.1 Accessing LiveCycle Administration Console" on page 18.)

2 Click **Settings** > **User Management** > **Users and Groups**.

3 In the **Find** box, type `all` and, in the **In** list, select **Groups**.

4 Click **Find** and, for the required domains, click **All Principals** in the list that appears.

5 Click the **Role Assignments** tab and click **Find Roles**.

6 In the list of roles, select the check box next to **Rights Management End User**.

7 Click **OK** and then click **Save**.

6.2.7 Accessing User Management

By using User Management, administrators can maintain a database of all users and groups, synchronized with one or more third-party user directories. User Management provides authentication, authorization, and user management for LiveCycle modules, including Reader Extensions, Workspace, Rights Management, Adobe® LiveCycle® Process Management 11, Adobe® LiveCycle® Forms Standard 11 and PDF Generator.

1 Log in to Administration Console.

2 On the home page, click **Settings** > **User Management**.

*Note: For information about configuring users with User Management, click **User Management Help** in the upper-right corner of the User Management page.*

6.2.8 Access Correspondence Management Solution template

You can verify the Correspondence Management Solution deployment by visiting http://[*hostname*]:[*port*]/lc/cm and logging in using LiveCycle administrator credentials. Solution template is a reference implementation of Correspondence Management Solution.

***Note:** In a non-turnkey deployment, if you encounter an error while accessing the solution template, you must integrate LiveCycle with Correspondence Management Solution. For more information, see the **Configure Publish nodes to Integrate with LiveCycle** section of this document.*

6.3 Configure Correspondence Management Solution

Perform the following tasks to configure Correspondence Management Solution.

For a recommended setup for the Correspondence Management Solution, see Correspondence Management Solution Topology.

6.3.1 Configure the Author instance

The Author instance is embedded within the LiveCycle server. This implies that you do not need to make any configuration updates to the Author instance. The instance inherits all the configuration settings from the LiveCycle server.

6.3.2 Configure the Publish instance

You must run separate Author and Publish instances for Correspondence Management Solution. However, you can configure the two instances on the same or on different machines. An author instance is embedded in the LiveCycle Core application and runs on the LiveCycle server. For publish instance, LCM configures a publish ear (`adobe-livecycle-cq-publish.ear`). Deploy the publish ear on a separate server instance.

***Note:** Before configuring the Publish instance, ensure that your author instance is configured and deployed. You can verify by successfully logging in to the solution template for Correspondence management Solution. For more information, see the **Access Correspondence Management Solution template** section of this document.*

1 Create a new server for the publish instance. Perform JBoss installation and use standard profile.

2 Copy the [*LiveCycle root*]/crx-repository directory from the author instance to the publish instance machine.

3 From the crx-repository directory on the publish instance machine, open the `crx-repository/install` folder. Keep the following packages and delete all other packages from the install folder:

- dataservices-pkg.zip
- platform-common-pkg.zip
- platform-content-pkg.zip
- platform-security-pkg.zip
- solution-correspondencemanagement-pkg.zip

4 Start the Publish server with `-Dcom.adobe.livecycle.crx.home=<location for crx-repository>` parameter, where `<location for crx-repository>` is the location where you copied the crx-repository directory for the Publish instance.

For details on how to configure generic JVM arguments for WebSphere and WebLogic, see the **Configuring the JVM arguments** section for WebSphere and WebLogic.

5 Copy the adobe-livecycle-cq-publish.ear file and deploy it to the appserver profile created in step 1.

Note: *If author and Publish instances are on the same machine, ensure that you start the Publish instance using a different port.*

Now that the Publish instance is up and running, you need to configure the two instances to communicate with each other.

6.3.3 Configure Publish nodes to Integrate with LiveCycle

Perform these steps on all publish instances. To enable communication between publish instance and LiveCycle Server:

1 Go to http://[*publishhost*]:[*publishport*]/lc/system/console/configMgr and Login with OSGi Management Console user credentials. The default credential are admin/admin.

2 Search and click **Edit** next to the **Adobe LiveCycle Client SDK Configuration** setting.

3 In the Server Url field, ensure that http://[*lchost*]:[*lcport*] is specified.

Important: *Ensure that the LiveCycle server is listening on the specified host and port combination. The following three scenarios are possible in the case of a LiveCycle server cluster:*

- All LiveCycle server instances are running on *localhost* and the same port. In this case use *localhost:[port]*.
- All LiveCycle server instances are running on *localhost* but on different ports. In this case, use a load balancer host name and port combination—*[loadbalancer_host]:[loadbalancer_port]*.
- All LiveCycle server instances are running on a particular host name (not *localhost*) and different/same ports. In this case, use a load balancer host name and port—*[loadbalancer_host]:[loadbalancer_port]*.

If you need to use a load balancer URL to access the LiveCycle server cluster (as mentioned above), ensure that the required communication ports between Author instances and the load balancer are open.

4 Specify LiveCycle administrator credentials in the Username as Password fields.

5 Click **Save**.

6.3.4 Communicating between the Author and Publish instances

You need to perform certain configuration changes to enable two-way communication between the Author and Publish instances.

6.3.4.1 Configure Replication Agents (Define publish instance URL)

On the Author instance, you need to configure replication agents for each Publish instance. These agents replicate content from the Author instances to all the Publish instances.

1 Log in to Tools UI at **http://<authorHost>:<authorPort>/lc/miscadmin**

2 Select **Replication**, then **Agents on author** in the left panel.

On the right panel, you see various agents configured for the Author instance.

3 On the right panel, Select **New**.... and click **New Page**.

The **Create Page** dialog displays.

4 Set the **Title** and **Name**, then select **Replication Agent**.

5 Click **Create** to create new agent.

6 Double-click the new agent item to open the configuration panel.

7 Click **Edit** - the **Agent Settings** dialog displays.

a In the **Settings** tab:

- Enter a **Description**.
- Check **Enabled**.
- Select **Serialization Type as Default**.
- Set the **Retry Delay** to **60000**.
- Set the **Log Level** as **Info**.

b In the **Transport** tab:

- Enter the required URI for the Publish instance
  `http://<publishHost>:<publishPort>/lc/bin/receive?sling:authRequestLogin=1`
- Set **User** and **Password**. The default credential are admin/admin.

8 Click **OK** to save the settings.

9 On the agent configuration panel, click **Test Connection**.

Successful connection ensures that the configuration is done correctly.

Note: *: In case, you have only one Publish instance you can use the default Replication Agent named as publish. You need to edit it for specifying Publish URI in the Transport tab as mentioned in the step b(i). In this case, you do not need to create a new replication agent.*

Note: *: In case, you have a publish farm(multiple non-clustered publish instances), you need to create a replication agent for each Publish instance as mentioned in Steps 1-9. For each such replication agent, Title and Name should be significant and unique, so the identification of the corresponding Publish instance can be simpler. Each such replication agent has a different URI in the Transport tab pointing to a particular Publish instance. For multiple publish instances, you can also create replication agents by copying the default agent publish and then editing Name and URI in transport tab of the created agent. If you are not using the default Replication Agent, disable it, so an unnecessary replication attempt can be avoided.*

Note: *For Author clusters, these steps need to be performed on one Author instance (preferably a master instance).*

6.3.4.2 Define Publish instance URL for ActivationManagerImpl

1 Go to http://<*authorHost*>:<*authorPort*>/lc/system/console/configMgr. Login with OSGi Management Console user credentials. The default credential is admin/admin.

2 Find and click the Edit icon next to the `com.adobe.livecycle.content.activate.impl.ActivationManagerImpl.name` setting.

3 In the ActivationManager Publish URL field, specify the URL for accessing the Publish instance ActivationManager. You can provide the following URLs.

   a L**oad Balancer URL (Recommended)**: Provide load balancer URL, If you have a webserver acting as load balancer in front of publish farm (multiple non-clustered publish instances).

   b **Publish instance URL**: Provide any publish instance URL, If you have a single publish instance or the webserver fronting the publish farm is not accessible from the author environment due to any restrictions. In case, the specified publish instance is down, there is a fallback mechanism to deal with on the author side.

   URL string: http://<hostname>:<port>/lc/bin/remoting/lc.content.remote.activate.activationManager

4 Click **Save**.

6.3.4.3 Configure reverse replication queue

On the Author instance, you need to configure reverse replication agents for each Publish instance. These agents replicate content from the Publish instance to the Author instance.

1 Log in to Tools UI at `http://<authorHost>:<authorPort>/lc/miscadmin`

2 Select **Replication**, then **Agents on author** in the left panel.

   On the right panel, you see various agents configured for the Author instance.

3 On the right panel, Select **New**, and click **New Page**.

   The **Create Page** dialog appears.

4 Set the **Title** and **Name**, then select **Reverse Replication Agent**.

5 Click **Create** to create new agent.

6 Double-click the new agent item to open the configuration panel.

7 Click **Edit** - the **Agent Settings** dialog displays.

   a In the **Settings** tab:

      • Enter a **Description**

      • Check **Enabled**.

      • Set the **Retry Delay** to **60000**.

      • Set the **Log Level** as **Info**.

   b In the Transport tab:

      • Enter the required URI for the Publish instance - http://<publishHost>:<publishPort>/lc/bin/receive?sling:authRequestLogin=1

      • Set **User** and **Password** - admin/admin

   c In the Extended tab: Set HTTP Method as GET

8 Click **OK** to save the settings.

9 On the agent configuration panel, click **Test Connection**.

Successful connection ensures that the configuration is done correctly.

Note: *: In case, you have only one Publish instance you can use the default Reverse Replication Agent named as* ***publish_reverse****. You need to edit it for specifying Publish URI in the* ***Transport*** *tab as mentioned in the step b(i). In this case, you do not need to create a new reverse replication agent.*

Note: *In case, you have a publish farm(multiple non-clustered publish instances), you need to create a reverse replication agent for each Publish instance as mentioned in Steps 1-9. For each such replication agent,* ***Title*** *and Name should be significant and unique, so the identification of the corresponding Publish instance can be simpler. Each such replication agent has a different URI in the* ***Transport*** *tab pointing to a particular Publish instance. For multiple publish agents, you can also create reverse replication agents by copying the default agent* ***publish_reverse*** *and then editing* ***Name*** *and* ***URI*** *in transport tab of the created agent. If you are not using the default Reverse Replication Agent, disable it, so an unnecessary replication attempt can be avoided.*

Note: *For Author clusters, these steps need to be performed on one Author instance (preferably a master instance).*

6.3.4.4 Define author instance URL for VersionRestoreManagerImpl

1. Go to `http://<publishHost>:<publishPort>/lc/system/console/configMgr`. Login with OSGi Management Console user credentials. The defaults credential are admin/admin.
2. Find and click the Edit icon next to the `com.adobe.livecycle.content.activate.impl.VersionRestoreManagerImpl.name` setting.
3. In the VersionRestoreManager Author URL field, specify the URL of the author instance VersionRestoreManager.

   URL string: http://<hostname>:<port>/lc/bin/remoting/lc.content.remote.activate.versionRestoreManager

   Note: *If there are multiple author instances(Clustered) fronted by a Load Balancer, specify the URL to the load balancer in the VersionRestoreManager Author URL field.*
4. Click **Save**.

6.3.5 Install sample users and assets

You can install sample users with predefined user permissions to further explore the solution template, which you can customize to build your own solution.

1. Go to http://<*authorHost*>:<*authorPort*>/lc/crx/explorer/index.jsp.
2. Log in using LiveCycle administrator credentials and click **Package Manager**.
3. In **Package Manager**, upload the samples-correspondencemanagement-pkg-<*version*>.zip package from <*LC_HOME*>/deploy/crx.
4. Click **Install** once the package uploads successfully.
5. Click **Install** on the confirmation dialog to install the sample users and assets.

Correspondence Management Sample Users

Correspondence Management Solution Accelerator contains the following sample users. These user are expected to participate in the activities leading to generation of interactive customer communication.

The following roles mentioned are automatically assigned to the users during package Installation:

User name	Assigned role	Responsibilities
Todd Goldman	Correspondence Management Administrator	This user is the general system administrator. This role enables the user to modify all assets. This role also lets define the categories.
Heather Douglas	Correspondence Management Subject Matter Expert	This persona has the role enabling him to CRUD texts and images.
Caleb Lopez	Correspondence Management Application Specialist	This user defines the letter template by judicious usage of the text, picture, condition, list objects. With this role, the user can CRUD the letter templates, layouts, lists, conditions, texts and images.
Gloria Rios	Correspondence Management Claim Adjustor	An agent user would use the letter template defined by the business user to produce the letter communication to deliver to the customer.
Jocelyn Robinson	Correspondence Management Form Designer	This user has the skills to design form layouts using LiveCycle Designer. Having equipped with the necessary know-how to design form layouts for use in correspondence management, this user will use LiveCycle Designer and design the XDP templates, which would serve as the boilerplate for the letter.
Frank Kricfalusi	Correspondence Management Developer	This user has the knowledge about XSD schema and data modelling concepts and is responsible for creation and maintenance of Data Dictionaries.

For more information about the sample users and guidelines to implement a solution using the solution template, see Correspondence Management Solution Guide.

Note: *For author clusters, these steps need to be performed on one author instance (preferably a master instance).*

6.3.6 Configure IPv6 implementation

Note: *Perform these steps only if Correspondence Management Solution is running on a machine that uses an IPv6 address.*

To map the IPv6 address to a hostname on the server and client machines:

1. Navigate to the C:\Windows\System32\drivers\etc directory.
2. Open the `hosts` file in a text editor.
3. Add a mapping for the IPv6 address to a host name. For example:

   ```
   2001:1890:110b:712b:d1d:9c99:37ef:7281 <ipv6_hostname>
   ```

4. Save and close the file.

Ensure that you use the mapped host name instead of the IPv6 address to access Correspondence Management Solution.

6.3.7 Install Japanese fonts for Adobe Reader

If your Correspondence Management assets use Japanese fonts, you must install the Japanese Language Support Package for Adobe Reader. Otherwise, your letters and forms will not render and function properly. For installing language packs, visit the downloads page for Adobe Reader.

6.4 Configuring PDF Generator

If you installed PDF Generator as part of your LiveCycle, complete the following tasks:

6.4.1 Environment variables

If you installed the PDF Generator module and configured it to convert files to PDF, for some file formats, you must manually set an environment variable that contains the absolute path of the executable that is used to start the corresponding application. The table below lists the environment variables for the native applications that you have installed.

Note: *All environment variables and respective paths are case-sensitive.*

Application	Environment variable	Example
Adobe Acrobat	`Acrobat_PATH`	`C:\Program Files (x86)\Adobe\Acrobat 11.0\Acrobat\Acrobat.exe`
Adobe FrameMaker®	`FrameMaker_PATH`	`C:\Program Files (x86)\Adobe\FrameMaker8.0\FrameMaker.exe`
Notepad	`Notepad_PATH`	`C:\WINDOWS\notepad.exe` You can leave the `Notepad_PATH` variable blank.
OpenOffice	`OpenOffice_PATH`	`C:\Program Files (x86)\OpenOffice.org 3.3`
Adobe PageMaker®	`PageMaker_PATH`	`C:\Program Files (x86)\Adobe\PageMaker 7.0.2\PageMaker.exe`
WordPerfect	`WordPerfect_PATH`	`C:\Program Files (x86)\WordPerfect Office 12\Programs\wpwin12.exe`
Adobe Photoshop®	`Photoshop_PATH`	`C:\Program Files (x86)\Adobe\Adobe Photoshop CS4\Photoshop.exe`

Note: *The environment variable `OpenOffice_PATH` is set to the installation folder instead of the path to the executable.*

You do not need to set up the paths for Microsoft Office applications such as Word, PowerPoint, Excel, Visio, and Project, or for AutoCAD. The Generate PDF service starts these applications automatically if they are installed on the server.

Create a new Windows environment variable

1. Select **Start** > **Control Panel** > **System**.
2. Click the **Advanced** tab and click **Environment Variables**.
3. In the System variables section, click **New.**
4. Enter the environment variable name you need to set (for example, enter `Photoshop_PATH`). This folder is the one that contains the executable file. For example, type the following path:

   ```
   D:\Program Files\Adobe\Adobe Photoshop CS4\Photoshop.exe
   ```

Set the PATH variables on Linux or UNIX (OpenOffice only)

Execute the following command:

```
export OpenOffice_PATH=/opt/openoffice.org3.3
```

6.4.2 Setting the Adobe PDF Printer as the default printer

You must set the Adobe PDF Printer to be the default printer on the server. If the Adobe PDF Printer is not set as the default, PDF Generator cannot convert files successfully.

Set the default printer

1. Select **Start** > **Printers and Faxes**.
2. In the Printers and Faxes window, right-click **Adobe PDF** and select **Set as Default Printer**.

6.4.3 Configuring Acrobat Professional (Windows-based Computers Only)

Note: *This procedure is required only if you upgraded to or installed Acrobat after you completed the LiveCycle installation. Upgrading Acrobat can be completed after you run Configuration Manager and deploy LiveCycle to the application server. Acrobat Professional root directory is designated as [Acrobat root]. Typically, the root directory is C:\Program Files\Adobe\Acrobat 11.0\Acrobat.*

Configure Acrobat for use with PDF Generator

1. If an earlier version of Acrobat is installed, uninstall it by using Add or Remove Programs in the Windows Control Panel.
2. Install Acrobat XI Pro by running the installer.
3. Navigate to the additional\scripts folder on the LiveCycle installation media.
4. Run the following batch file.

   ```
   Acrobat_for_PDFG_Configuration.bat [LiveCycle root]/pdfg_config
   ```

5. On other cluster nodes on which you do not run LiveCycle Configuration Manager,do the following:
   - Add a new registry DWORD entry named SplWOW64TimeOut at HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Print. Set its value to 60000.
   - Copy `PDFGen.api` from the [*LiveCycle root*]/plugins/x86_win32 directory on the node where LiveCycle is installed to the [*Acrobat root*]/plug_ins directory on the node being currently configured.
6. Open Acrobat and select **Help** > **Check for updates** > **Preferences**.
7. Deselect **Automatically check for Adobe updates**.

Validate the Acrobat installation

1. Navigate to a PDF file on your system and double-click it to open it in Acrobat. If the PDF file opens successfully, Acrobat is installed correctly.
2. If the PDF file does not open correctly, uninstall Acrobat and reinstall it.

Note: *Ensure that you dismiss all the Acrobat dialog boxes that are displayed after the Acrobat installation is completed and disable the automatic updates for Acrobat. Set the* `Acrobat_PATH` *environment variable to point to Acrobat.exe (For example, C:\Program Files\Adobe\Acrobat 11.0\Acrobat\Acrobat.exe).*

Configure native application support

1 Install and validate Acrobat as described in the previous procedure.

2 Set Adobe PDF printer as the default printer.

Add temporary directories to trusted directories list in Acrobat

The `OptimizePDF` service uses Adobe Acrobat and mandates that LiveCycle temporary directory and PDF Generator temporary directory are listed in the trusted directories list of Acrobat.

If LiveCycle temporary directory and PDF Generator temporary directory are not listed in the trusted directories list, the `OptimizePDF` service fails to run. Perform the following steps to add directories to the temporary directory list:

1 Open Acrobat, Choose Edit > Preferences.

2 From the Categories on the left, select Security (Enhanced), and then select the Enable Enhanced Security option.

3 To add LiveCycle temporary directory and PDF Generator temporary directory to the trusted directories list, click **Add Folder Path**, select directories and click **OK.**

6.4.4 Adding fonts to PDF Generator

LiveCycle provides a central repository of fonts, which is accessible to all LiveCycle modules. Make the extra fonts available to non-LiveCycle applications on the server so that PDF Generator can use these fonts to create PDF documents that are created with these applications.

Note: *Restart the application server after adding new fonts to the specified fonts folder.*

6.4.4.1 Non-LiveCycle applications

The following list contains non-LiveCycle applications that PDF Generator can use for PDF generation on the server side:

Windows-only Applications

- Microsoft Office Word
- Microsoft Office Excel
- Microsoft Office PowerPoint
- Microsoft Office Project
- Microsoft Office Visio
- Microsoft Office Publisher
- AutoDesk AutoCAD
- Corel WordPerfect
- Adobe Photoshop CS
- Adobe FrameMaker
- Adobe PageMaker
- Adobe Acrobat Professional

Multiplatform applications

- OpenOffice Writer
- OpenOffice Calc
- OpenOffice Draw

- OpenOffice Impress

Note: *In addition to these applications, your list may include additional applications that you added.*

Of the above applications, the OpenOffice Suite (which includes Writer, Calc, Draw, and Impress) is available on Windows, Solaris, and Linux platforms, whereas other applications are available on Windows only.

6.4.4.2 Adding new fonts to Windows applications only

All the Windows-only applications that are mentioned above can access all the fonts that are available in the C:\Windows\Fonts (or equivalent) folder. In addition to C:\Windows\Fonts, each of these applications may have its own private fonts folders.

Therefore, if you plan to add any custom fonts to the LiveCycle fonts repository, ensure that the same fonts are available to the Windows-only applications also by copying these fonts to either C:\Windows\Fonts or to an equivalent folder.

Your custom fonts must be licensed under an agreement that allows you to use them with the applications that have access to these fonts.

6.4.4.3 Adding new fonts to other applications

If you added support for PDF creation in other applications, see the Help for these applications to add new fonts. In Windows, copying your custom fonts to the C:\Windows\Fonts (or equivalent) folder should be sufficient.

6.4.5 Configuring HTML to PDF conversions

The HTML-to-PDF conversion process is designed to use the settings from Acrobat XI Pro that override the settings from PDF Generator.

Note: *This configuration is required to enable the HTML-to-PDF conversion process, otherwise this conversion type will fail.*

6.4.5.1 Configure the HTML-to-PDF conversion

1. Install and validate Acrobat as described in "6.4.3 Configuring Acrobat Professional (Windows-based Computers Only)" on page 30.
2. Locate the pdfgen.api file in the *[LiveCycle root]*\plugins\x86_win32 directory and copy it to *[Acrobat root]*\Acrobat\plug_ins directory.

6.4.5.2 Enable support for Unicode fonts in HTML to PDF conversions

Important: *The HTML-to-PDF conversion fails if a zipped input file contains HTML files with double-byte characters in filenames. To avoid this problem, do not use double-byte characters when naming HTML files.*

1. Copy the Unicode font to any of the following directories as appropriate for your system:
   - Windows

     [Windows root]\Windows\fonts

     [Windows root]\WINNT\fonts
   - UNIX

     /usr/lib/X11/fonts/TrueType

     /usr/openwin/lib/X11/fonts/TrueType

     /usr/share/fonts/default/TrueType

/usr/X11R6/lib/X11/fonts/ttf

/usr/X11R6/lib/X11/fonts/truetype

/usr/X11R6/lib/X11/fonts/TrueType

/usr/X11R6/lib/X11/fonts/TTF

/Users/cfqauser/Library/Fonts

/System/Library/Fonts

/Library/Fonts

/Users/ + System.getProperty(<user name>, root) + /Library/Fonts

System.getProperty(JAVA_HOME) + /lib/fonts

/usr/share/fonts (Solaris)

Note: *Ensure that the directory /usr/lib/X11/fonts exists. If it does not, create a symbolic link from /usr/share/X11/fonts to /usr/lib/X11/fonts using the* `ln` *command.*

2 Modify the font-name mapping in the cffont.properties file located in the *[LiveCycle root]*/deploy/adobe-generatepdf-dsc.jar file:

- Extract this archive, and locate the cffont.properties file and open it in an editor.
- In the comma-separated list of Java font names, add a map to your Unicode system font for each font type. In the example below, kochi mincho is the name of your Unicode system font.

```
dialog=Arial, Helvetica, kochi mincho

dialog.bold=Arial Bold, Helvetica-Bold, kochi mincho ...
```

- Save and close the properties file, and then repackage and redeploy the `adobe-generatepdf-dsc.jar` file.

Note: *On a Japanese operating system, specify the font mapping in the cffont.properties.ja file as well, which takes precedence over the standard cffont.properties file.*

Fonts in the list are searched from left to right, using the first font found. HTML-to-PDF conversion logs return a list of all the font names that are found in the system. To determine the font name you need to map, add the font to one of the directories above, restart the server, and run a conversion. You can determine from the log files the font name to use for mapping.

To embed the font in the generated PDF files, set the `embedFonts` property in the cffont.properties file to `true` (the default is `false`).

6.4.6 Modify Microsoft Visio default macro settings

When a Microsoft Visio file containing macros is submitted for conversion, the resultant Microsoft Office Visio Security Notice dialog causes the conversion to time out. To successfully convert files that contain macros, the default macro settings in Visio must be changed.

❖ In Visio, click **Tools** > **Trust Center** > **Macro Settings** and select either of the following options and then click **OK**:

- Disable all macros without notification
- Enable all macros

6.4.7 Installing the Network Printer Client

PDF Generator includes an executable file to install the PDF Generator network printer on a client computer. After the installation is complete, a PDF Generator printer is added to the list of existing printers on the client computer. This printer can then be used to send documents for conversion to PDF.

Note: *The Network Printer Client installation wizard available in the Administration Console is supported only on Windows operating system. Ensure that you use a 32-bit JVM to launch the Network Printer Client installation wizard. You will encounter an error if you use a 64-bit JVM.*

If the PDFG Network Printer fails to install on Windows or if you want to install the printer on UNIX or Linux platforms, use the operating system's native Add Printer utility and configure it as described in "6.4.7.2 Configure PDFG Network Printer on Windows using the native Add Printer wizard" on page 34

6.4.7.1 Install the PDF Generator Network Printer Client

Note: *Before installing the PDF Generator network printer client on Windows Server 2008, Ensure that you have the Internet Printing Client feature installed on your Windows Server 2008. For installing the feature, see Windows Server 2008 Help.*

1. Ensure that you successfully installed PDF Generator on your server.
2. Do one of the following:
   - From a Windows client computer, enter the following URL in your web browser, where *[host]* is the name of the server where you installed PDF Generator and *[port]* is the application server port used:

     `http://[host]:[port]/pdfg-ipp/install`
   - In Administration Console, click **Home > Services > PDF Generator > PDFG Network Printer**. In the **PDFG Network Printer Installation** section, click **Click here** to launch the PDFG Network Printer Installation.
3. On the Configure Internet Port screen, select **Use the specified user account** option, and provide the credentials of a LiveCycle user who has the PDFG Administrator/User role. This user must also have an email address that can be used to receive the converted files. To have this security setting apply to all users on the client computer, select **Use the same security options for all users**, and then click **OK**.

   Note: *If the user's password changes, then users will need to reinstall the PDFG Network Printer on their computers. You cannot update the password from Administration Console.*

   Upon successful installation, a dialog box appears, indicating that "The Printer Adobe LiveCycle PDF Generator 11 has been successfully installed."
4. Click **OK**. You will now have a printer named *Adobe LiveCycle PDF Generator 11*in your list of available printers.

6.4.7.2 Configure PDFG Network Printer on Windows using the native Add Printer wizard

1. Click **Start** > **Printers and Faxes** and double-click **Add Printer**.
2. Click **Next**, select **A network printer, or a printer attached to another computer**, and then click **Next**.
3. Select **Connect to a printer on the internet or on a home or office network** and type the following URL for the PDFG printer, where *[host]* is the server name and *[port]* is the port number where the server is running:

   `http://[host]:[port]/pdfg-ipp/printer`
4. On the Configure Internet Port screen, select **Use the specified user account** and provide valid User credentials.
5. In the **Printer Driver Select** box, choose any standard PostScript-based printer driver (for example, HP Color LaserJet PS).
6. Complete the installation by choosing appropriate options (for example, setting this printer as default).

Note: *The user credentials used while adding the printer must have a valid email ID configured in User Management to receive the response.*

7 Configure the email service's sendmail service. Provide a valid SMTP server and authentication information in the service's configuration options.

6.4.7.3 Install and configure the PDF Generator Network Printer Client using Proxy server port forwarding

1 Configure port forwarding on the CC Proxy server on a particular port to the LiveCycle Server, and disable the authentication at proxy server level (because LiveCycle uses its own authentication). If a client connects to this Proxy server on the forwarded port, then all the requests will be forwarded to the LiveCycle Server.

2 Install PDFG Network Printer using the following URL:

```
http://[proxy server]:[forwarded port]/pdfg-ipp/install.
```

3 Provide the necessary credentials for authentication of the PDFG Network Printer.

4 The PDFG Network Printer will be installed on the client machine which you can use for PDF conversion using the firewall protected LiveCycle Server.

6.4.8 Changing File Block Settings

Change Microsoft Office trust center settings to enable PDFG to convert older versions of Microsoft office documents.

1 Click the **File tab** in any Office 2010 application. Under **Help**, click **Options**; the Options dialog box appears

2 Click **Trust Center**, and then click **Trust Center Settings**.

3 In the **Trust Center settings**, click **File Block Settings**.

4 In the File Type list, uncheck open for the file type that you want to be converted by PDFG.

6.4.9 Watched folder performance parameters

To avoid `java.io.IOException` error messages indicating that not enough disk space is available to perform PDF conversions by using a watched folder, you can modify the settings for PDF Generator in Administration Console.

Set performance parameters for PDF Generator

1 Log in to Administration Console and click **Services** > **Applications and Services** > **Service Management**.

2 In the list of services, navigate to and click **PDFGConfigService**, and then set the following values:

- **PDFG Cleanup Scan Seconds**: 1800
- **Job Expiration Seconds**: 6000
- **Server Conversion Timeout**: Change the default of 270 to a higher value, such as 450.

3 Click **Save** and restart the server.

6.4.10 Enable PDF Conversion for Microsoft Word document containing protected fields

The PDF Generator supports Microsoft Word documents containing protected fields. To enable PDF Conversion for Microsoft Word document containing protected fields, change the file type settings:

1 In the **Administration Console**, navigate to **Services** > **PDF Generator** > **File Type Settings**, and open your file type settings profile.

2 Expand the **Microsoft Word** option and select the **Preserve document markup in Adobe PDF (for Microsoft Office 2003 or later)** option.

3 Click **Save As**, specify name of the file type setting, and click **OK**.

6.5 Final setup for Rights Management

Rights Management requires the application server to be configured to use SSL. (See Administration Help.)

6.6 Configuring LDAP access

6.6.1 Configure User Management (Local Domain)

1 Open a web browser, navigate to http://*[host]*:*[port]*/adminui, and log in. (See "6.1.3.1 Accessing LiveCycle Administration Console" on page 18 .)

2 Click **Settings** > **User Management** > **Domain Management**, and then click **New Local Domain**.

3 In the appropriate boxes, enter the domain ID and name. (See "Adding local domains" in Administration help.)

4 (Optional) Disable account locking by deselecting the **Enable Account Locking** option.

5 Click **OK**.

6.6.2 Configure User Management with LDAP (Enterprise Domain)

1 Open a web browser, navigate to http://*[host]*:*[port]*/adminui and log in. (See "6.1.3.1 Accessing LiveCycle Administration Console" on page 18.)

2 Click **Settings** > **User Management** > **Domain Management**, and then click **New Enterprise Domain**.

3 In the **ID** box, type a unique identifier for the domain and, in the **Name** box, type a descriptive name for the domain.

Note: *When using MySQL for your LiveCycle database, use only single-byte (ASCII) characters for the ID. (See "Adding enterprise domains" in Administration Help.)*

4 Click **Add Authentication** and, in the **Authentication Provider** list, select **LDAP**.

5 Click **OK**.

6 Click **Add Directory** and, in the **Profile Name** box, type a name for your LDAP profile.

7 Click **Next**.

8 Specify values in the **Server**, **Port**, **SSL**, and **Binding** boxes, and in the **Populate Page with** box, select a directory settings option such as **Default Sun ONE values**. Also, specify values in the **Name** and **Password** box that would be used to connect to the LDAP database when anonymous access is not enabled. (See "Directory settings" in Administration Help.)

9 (Optional) Test your configuration:

- Click **Test**. The screen displays a message indicating either a successful server test or any configuration errors that exist.

10 Click **Next** and configure the **User Settings** as required. (See "Directory settings" in Administration Help.)

11 (Optional) Test your configuration:

- Click **Test**.
- In the Search Filter box, verify the search filter or specify a new search filter, and then click **Submit**. The screen displays a list of entries that match the search criteria.
- Click **Close** to return to the User Settings screen.

12 Click **Next** configure the **Group Settings** as required. (See "Directory settings" in Administration Help.)

13 (Optional) Test your configuration:

- Click **Test**.
- In the Search Filter box, verify the search filter or specify a new search filter, and then click **Submit**. The screen displays a list of entries that match the search criteria.
- Click **Close** to return to the Group Settings screen.

14 Click **Finish** to exit the New Directory page and then click **OK** to exit.

6.7 Enabling FIPS mode

LiveCycle provides a FIPS mode to restrict data protection to Federal Information Processing Standard (FIPS) 140-2 approved algorithms using the RSA BSAFE Crypto-C 2.1 encryption module.

If you did not enable this option by using Configuration Manager during LiveCycle configuration or if you enable it but want to turn it off, you can change this setting through Administration Console.

Modifying FIPS mode requires you to restart the server.

FIPS mode does not support Acrobat versions earlier than 7.0. If FIPS mode is enabled and the Encrypt With Password and Remove Password processes include the Acrobat 5 setting, the process fails.

In general, when FIPS is enabled, the Assembler service does not apply password encryption to any document. If this is attempted, a `FIPSModeException` is thrown, indicating that "Password encryption is not permitted in FIPS mode." Additionally, the `PDFsFromBookmarks` element is not supported in FIPS mode when the base document is password-encrypted.

Turn FIPS mode on or off

1 Log in to Administration Console.

2 Click **Settings** > **Core System Settings** > **Configurations**.

3 Select **Enable FIPS** to enable FIPS mode or deselect it to disable FIPS mode.

4 Click **OK** and restart the application server.

Note: *LiveCycle software does not validate code to ensure FIPS compatibility. It provides a FIPS operation mode so that FIPS-approved algorithms are used for cryptographic services from the FIPS-approved libraries (RSA).*

6.8 Configuring HTML digital signature

To use the HTML digital signature feature of Forms, complete the following procedure.

1 Manually deploy the *[LiveCycle root]*/deploy/adobe-forms-ds.ear file to your application server.

2 Log in to Administration Console and click **Services** > **LiveCycle Forms ES4**.

3 Select **HTML Digital Signature Enabled** and then click **Save**.

6.9 Configuring Connector for EMC Documentum

Note: *LiveCycle supports EMC Documentum, versions 6.0, 6.5, 6.7 SP1, and 7.0 and minor updates only. Make sure your ECM is upgraded accordingly.*

If you installed Connector for EMC Documentum as part of your LiveCycle, complete the following procedure to configure the service to connect to the Documentum repository.

Configure Connector for EMC Documentum

1 Locate the adobe-component-ext.properties file in the *[appserver root]*/bin folder (if the file does not exist, create it).

2 Add a new system property that provides the following Documentum Foundation Classes JAR files:

- dfc.jar
- aspectjrt.jar
- log4j.jar
- jaxb-api.jar
- (For Connector for EMC Documentum 6.5 only)
  - configservice-impl.jar,
  - configservice-api.jar

The new system property should take on this form:

```
[component id].ext=[JAR files and/or folders]
```

For example, using default Content Server and Documentum Foundation Classes installations, add to the file one of the following system properties on a new line, with no line breaks, and end the line with a carriage return:

- Connector for EMC Documentum 6.0 only:

```
com.adobe.livecycle.ConnectorforEMCDocumentum.ext=
C:/Program Files/Documentum/Shared/dfc.jar,
C:/Program Files/Documentum/Shared/aspectjrt.jar,
```

- Connector for EMC Documentum 6.5 only:

```
com.adobe.livecycle.ConnectorforEMCDocumentum.ext=
C:/Program Files/Documentum/Shared/dfc.jar,
C:/ProgramFiles/Documentum/Shared/aspectjrt.jar,
C:/Program Files/Documentum/Shared/log4j.jar,
C:/Program Files/Documentum/Shared/jaxb-api.jar,
C:/Program Files/Documentum/Shared/configservice-impl.jar,
C:/Program Files/Documentum/Shared/configservice-api.jar
```

Note: *The above text contains formatting characters for line breaks. If you copy and paste this text, you must remove the formatting characters.*

- Connector for EMC Documentum 6.7 SP1 and 7.0 only:

```
com.adobe.livecycle.ConnectorforEMCDocumentum.ext=
C:/Program Files/Documentum/Shared/dfc.jar,
C:/ProgramFiles/Documentum/Shared/aspectjrt.jar,
C:/Program Files/Documentum/Shared/log4j.jar,
C:/Program Files/Documentum/Shared/jaxb-api.jar,
C:/Program Files/Documentum/Shared/configservice-impl.jar,
C:/Program Files/Documentum/Shared/configservice-api.jar
C:/Program Files/Documentum/Shared/commons-codec-1.3.jar
C:/Program Files/Documentum/Shared/commons-lang-2.4.jar
```

Note: *The above text contains formatting characters for line breaks. If you copy and paste this text, you must remove the formatting characters.*

3 Open a web browser and enter this URL:

```
http://[host]:[port]/adminui
```

4 Log in using the default user name and password:

User name: administrator

Password: password

5 Navigate to **Services** > **LiveCycle 11 Connector for EMC Documentum** > **Configuration Settings** and perform these tasks:

- Type all the required Documentum repository information.
- To use Documentum as your repository provider, under Repository Service Provider Information, select **EMC Documentum Repository Provider**, and then click **Save**. For more information, click the Help link in the upper-right corner of the page in the Administration Help.

6 (Optional) Navigate to **Services** > **LiveCycle 11 Connector for EMC Documentum** > **Repository Credentials Settings**, click **Add**, specify the Docbase information, and then click **Save**. (For more information, click **Help** in the upper-right corner.)

7 If the application server is not currently running, start the server. Otherwise, stop and then restart the server.

8 Open a web browser and enter this URL.

```
http://[host]:[port]/adminui
```

9 Log in using the default user name and password:

User name: administrator

Password: password

10 Navigate to **Services** > **Applications and Services** > **Service Management** and select these services:

- EMCDocumentumAuthProviderService

- EMCDocumentumContentRepositoryConnector
- EMCDocumentumRepositoryProvider

11 Click **Start**. If any of the services do not start correctly, check the settings you completed earlier.

12 Do one of the following tasks:

- To use the Documentum Authorization service (EMCDocumentumAuthProviderService) to display content from a Documentum repository in the Resources view of Workbench, continue with this procedure. Using the Documentum Authorization service overrides the default LiveCycle authorization and must be configured to log in to Workbench using Documentum credentials.
- To use the LiveCycle repository, log in to Workbench by using the LiveCycle super administrator credentials (by default, *administrator* and *password*).

You have now completed the required steps for this procedure. Use the credentials provided in step 19 for accessing the default repository in this case and use the default LiveCycle authorization service.

13 Restart the application server.

14 Log in to Administration Console and click **Settings** > **User Management** > **Domain Management**.

15 Click **New Enterprise Domain**, and type a domain ID and name. The domain ID is the unique identifier for the domain. The name is a descriptive name for the domain.

Note: *When using MySQL for your LiveCycle database, use only single-byte (ASCII) characters for the ID. (See "Adding enterprise domains" in LiveCycle Administration Help.)*

16 Add a custom authentication provider:

- Click **Add Authentication**.
- In the Authentication Provider list, select **Custom**.
- Select **EMCDocumentumAuthProvider** and then click **OK**.

17 Add an LDAP authentication provider:

- Click **Add Authentication**.
- In the Authentication Provider list, select **LDAP**, and then click **OK**.

18 Add an LDAP directory:

- Click **Add Directory**.
- In the Profile Name box, type a unique name, and then click **Next**.
- Specify values for the **Server**, **Port**, **SSL**, **Binding**, and **Populate page with** options. If you select User for the Binding option, you must also specify values for the **Name** and **Password** fields.
- (Optional) Select **Retrieve Base DN** to retrieve base domain names, as required.
- Click **Next**, configure the user settings, click **Next**, configure group settings, as required, and then click **Next**.

  For details about the settings, click **User Management Help** in the upper-right corner of the page.

19 Click **OK** to exit the Add Directory page and then click OK again.

20 Select the new enterprise domain and click **Sync Now**. Depending on the number of users and groups in your LDAP network and the speed on your connection, the synchronization process may take several minutes.

(Optional) To verify the status of the synchronization, click **Refresh** and view the status in the Current Sync State column.

21 Navigate to **Settings > User Management > Users and Groups**.

22 Search for users that were synchronized from LDAP and perform these tasks:

- Select one or more users and click **Assign Role**.
- Select one or more LiveCycle roles and click **OK**.
- Click **OK** a second time to confirm the role assignment.

  Repeat this step for all users that you assign roles to. For more information, click **User Management Help** in the upper-right corner of the page.

23 Start Workbench and log in by using the credentials for the Documentum repository:

Username: [*username*]@[*repository_name*]

Password: [*password*]

After you log in, the Documentum repository appears in the Resources view within Workbench. If you do not log in using the *username@repository_name*, Workbench attempts to log in to the default repository.

24 (Optional) To install the LiveCycle Samples for Connector for EMC Documentum, create a Documentum repository named Samples, and then install the samples in that repository.

After you configure the Connector for EMC Documentum service, see *LiveCycle Administration Help* for information about configuring Workbench with your Documentum repository.

6.9.1 Creating the XDP MIME format in a Documentum repository

Before users can store and retrieve XDP files from a Documentum repository, you must do one of these tasks:

- Create a corresponding XDP format in each repository where users will access XDP files.
- Configure the Connector for EMC Documentum service to use a Documentum Administrator account when accessing the Documentum repository. In this case, the Connector for EMC Documentum service uses the XDP format whenever it is required.

Create the XDP format on Documentum Content Server using Documentum Administrator

1 Log in to Documentum Administrator.

2 Click **Formats** and then select **File** > **New** > **Format**.

3 Type the following information in the corresponding fields:

Name:`xdp`

Default File Extension:`xdp`

Mime Type: `application/xdp`

4 Repeat steps 1 to 3 for all other Documentum repositories where users will store XDP files.

Configure the Connector for EMC Documentum service to use a Documentum Administrator

1 Open a web browser and enter this URL:

http://*[host]*:*[port]*/adminui

2 Log in using the default user name and password:

User name: administrator

Password: password

3 Click **Services** > **LiveCycle 11 Connector for EMC Documentum** > **Configuration Settings**.

4 Under Documentum Principal Credentials Information, update the following information and then click **Save**:

User Name: *[Documentum Administrator user name]*

Password: *[Documentum Administrator password]*

5 Click **Repository Credentials Settings**, select a repository from the list or, if none exist, click **Add**.

6 Provide the appropriate information in the corresponding fields and then click **Save**:

Repository Name: *[Repository Name]*

Repository Credentials User Name:*[Documentum Administrator user name]*

Repository Credentials Password:*[Documentum Administrator password]*

7 Repeat steps 5 and 6 for all repositories where users will store XDP files.

6.9.2 Add support for multiple connection brokers

LiveCycle Configuration Manager supports configuring only one connection broker. Use LiveCycle Administrator Console to add support for multiple connection brokers:

1 Open LiveCycle Administrator Console.

2 Navigate to Home > Services > LiveCycle 11 Connector for EMC Documentum > Configuration Settings.

3 In the **Connection broker Host Name or IP Address,** enter comma seperated list of hostnames of different connection brokers. For example, host1, host2, host3.

4 In the **Port Number of Connection broker**, enter comma seperated list of the ports of corresponding connection brokers. For example, 1489, 1491, 1489.

5 Click **Save**.

6.10 Configuring the Connector for IBM Content Manager

Note: *LiveCycle supports IBM Content Manager, version 8.4 only. Make sure your ECM is upgraded accordingly.*

If you installed the Connector for IBM Content Manager as part of your LiveCycle, complete the following procedure to configure the service to connect to the IBM Content Manager datastore.

Configure Connector for IBM Content Manager

1 Locate the adobe-component-ext.properties file in the *[appserver root]*/bin folder. If the file does not exist, create it.

2 Add a new system property that provides the location of the following IBM II4C JAR files:

- cmb81.jar
- cmbcm81.jar
- cmbicm81.jar
- cmblog4j81.jar
- cmbsdk81.jar
- cmbutil81.jar
- cmbutilicm81.jar

- cmbview81.jar
- cmbwas81.jar
- cmbwcm81.jar
- cmgmt

Note: *cmgmt is not a JAR file. On Windows, by default, this folder is at* `C:/Program Files/IBM/db2cmv8/`.

- common.jar
- db2jcc.jar
- db2jcc_license_cisuz.jar
- db2jcc_license_cu.jar
- ecore.jar
- ibmjgssprovider.jar
- ibmjsseprovider2.jar
- ibmpkcs.jar
- icmrm81.jar
- jcache.jar
- log4j-1.2.8.jar
- xerces.jar
- xml.jar
- xsd.jar

The new system property looks similar to the following:

```
[component id].ext=[JAR files and/or folders]
```

For example, using a default DB2 Universal Database Client and II4C installation, in the file, add the following system property on a new line, with no line breaks, and end the line with a carriage return:

```
C:/Program Files/IBM/db2cmv8/cmgmt,
C:/Program Files/IBM/db2cmv8/java/jre/lib/ibmjsseprovider2.jar,
C:/Program Files/IBM/db2cmv8/java/jre/lib/ibmjgssprovider.jar,
C:/Program Files/IBM/db2cmv8/java/jre/lib/ibmpkcs.jar,
C:/Program Files/IBM/db2cmv8/java/jre/lib/xml.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbview81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmb81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbcm81.jar,
C:/Program Files/IBM/db2cmv8/lib/xsd.jar,
C:/Program Files/IBM/db2cmv8/lib/common.jar,
C:/Program Files/IBM/db2cmv8/lib/ecore.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbicm81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbwcm81.jar,
C:/Program Files/IBM/db2cmv8/lib/jcache.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbutil81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbutilicm81.jar,
C:/Program Files/IBM/db2cmv8/lib/icmrm81.jar,
C:/Program Files/IBM/db2cmv8/lib/db2jcc.jar,
C:/Program Files/IBM/db2cmv8/lib/db2jcc_license_cu.jar,
C:/Program Files/IBM/db2cmv8/lib/db2jcc_license_cisuz.jar,
C:/Program Files/IBM/db2cmv8/lib/xerces.jar,
C:/Program Files/IBM/db2cmv8/lib/cmblog4j81.jar,
C:/Program Files/IBM/db2cmv8/lib/log4j-1.2.8.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbsdk81.jar,
C:/Program Files/IBM/db2cmv8/lib/cmbwas81.jar
```

3 If the application server is not currently running, start the server; otherwise, stop and then restart the server.

You can now connect to the IBM Content Manager datastore from the IBMCMConnectorService Property Sheets by using the Use User Credentials as the login mode.

You have now completed the required steps for this procedure.

(Optional) If you want to connect to IBM Content Manager datastore from IBMCMConnectorService Property Sheets by using the Use Credentials From Process Context as the login mode, complete the following procedure.

Connect using Use Credentials from process context login mode

1 Open a web browser and enter this URL:

http://*[host]*:*[port]*/adminui

2 Log in using the super administrator credentials. Default values set during installation are:

User name:*administrator*

Password:*password*

3 Click **Services** > **LiveCycle 11 Connector for IBM Content Manager**

4 Type all of the required repository information and click **Save**. For more information about the IBM Content Manager repository information, click the **Help** link in the upper-right corner of the page.

5 Do one of these tasks:

- To use the IBM Content Manager Authorization service IBMCMAuthProvider to use content from an IBM Content Manager datastore, in the Processes view of Workbench, continue with this procedure. Using the IBM Content Manager Authorization service overrides the default LiveCycle authorization and must be configured to log in to Workbench by using IBM Content Manager credentials.

- To use the System Credentials provided in step 4 to use content from an IBM Content Manager datastore, in the Processes view of Workbench, log in to Workbench by using the LiveCycle super administrator credentials (by default, *administrator* and *password*). You have now completed the required steps for this procedure. The System Credentials that are provided in step 4 use the default LiveCycle authorization service for accessing the default repository in this case.

6 Log in to the Administration Console, and click **Settings** > **User Management** > **Domain Management**.

7 Click **New Enterprise Domain** and type a domain ID and name. The domain ID is the unique identifier for the domain. The name is a descriptive name for the domain.

Note: *When using MySQL for your LiveCycle database, use only single-byte (ASCII) characters for the ID. (See Adding enterprise domains in Administration Help.)*

8 Add a custom authentication provider:

- Click **Add Authentication**.
- In the **Authentication Provider** list, select **Custom**, and then select **IBMCMAuthProviderService** and click **OK**.

9 Add an LDAP authentication provider:

- Click **Add Authentication**.
- In the **Authentication Provider** list, select **LDAP** and then click **OK**.

10 Add an LDAP directory:

- Click **Add Directory**.
- In the **Profile Name** box, type a unique name, and then click **Next**.
- Specify values for the **Server**, **Port**, **SSL**, **Binding**, and **Populate page with** options. If you select **User** for the **Binding** option, you must also specify values for the **Name** and **Password** fields. (Optional) Select **Retrieve Base DN** to retrieve base domain names, as required. When finished, click **Next**.
- Configure the user settings, click **Next**, configure group settings as required, and then click **Next**.

For details about the above settings, click the **Help** link in the upper-right corner of the page.

11 Click **OK** to exit the Add Directory page and click **OK** again.

12 Select the new enterprise domain and click **Sync Now**. Depending on the number of users and groups in your LDAP network and the speed on your connection, the synchronization process may take several minutes.

13 To verify the status of the synchronization, click **Refresh** and view the status in the **Current Sync State** column.

14 Navigate to **Settings** > **User Management** > **Users and Groups**.

15 Search for users that were synchronized from LDAP and do these tasks:

- Select one or more users and click **Assign Role**.
- Select one or more LiveCycle roles and click **OK**.
- Click **OK** a second time to confirm the role assignment.

Repeat this step for all users that you want to assign roles to. For more information, click the **Help** link in the upper-right corner of the page.

16 Start Workbench and log in using the following credentials for IBM Content Manager datastore:

Username:*[username]@[repository_name]*

Password: *[password]*

The IBM Content Manager datastore can now be used in the Processes view within Workbench when the login mode for IBMCMConnectorService orchestrable components is selected as **Use Credentials from process context.**

6.11 Configuring the Connector for IBM FileNet

LiveCycle supports IBM FileNet, versions 4.0, 4.5, 5.0, and 5.2 only. Make sure your ECM is upgraded accordingly.

Note: *LiveCycle supports FileNet 5.2 Content Engine; FileNet 5.2 Process Engine is not supported. Moreover, the LiveCycle Configuration Manager (LCM) does not support/configure FileNet 5.2, perform manual configuration for FileNet 5.2.*

If you installed Connector for IBM FileNet as part of your LiveCycle, you must configure the service to connect to the FileNet object store.

Complete the following procedure to configure Connector for IBM FileNet.

Configure Connector for IBM FileNet using FileNet 4.x or FileNet 5.x and CEWS transport

1 Open the application server run file in a text editor. The run file is as follows:

- (Windows) *[appserver root]*/bin/run.conf
- (Non-Windows) *[appserver root]*/bin/run.conf

2 (**Only for FileNet 4.x**)Add the location of the FileNet Configuration files as a Java option to the application server start command, and then save the file.

Note: *If JBoss is running as a service, add the Java option in the registry where other JVM arguments are defined.*

```
-Dwasp.location= <configuration files location>
```

For example, using a default FileNet Application Engine installation on a Windows operating system, add this Java option:

```
-Dwasp.location=C:/Progra~1/FileNet/AE/CE_API/wsi
```

3 If your deployment uses the Process Engine Connector service, copy the file *[appserver root]*\client\logkit.jar to the following directory:

- **(Manually-configured JBoss, cluster)** *[appserver root]*/server/all/lib
- **(Manually-configured JBoss, single server)** *[appserver root]*/server/standard/lib
- **(Adobe-preconfigured JBoss, cluster)***[appserver root]*/server/lc_<db-name>_cl/lib
- **(Adobe-preconfigured JBoss, single server)***[appserver root]*/server/lc_<db-name>/lib

4 Locate the adobe-component-ext.properties file in the *[appserver root]*/bin folder (if the file does not exist, create it).

5 Add a new system property that provides the location of these FileNet Application Engine JAR files:

For Filenet 4.x add following JAR files.

- javaapi.jar
- soap.jar
- wasp.jar
- builtin_serialization.jar (FileNet 4.0 only)
- wsdl_api.jar
- jaxm.jar

- jaxrpc.jar
- saaj.jar
- jetty.jar
- runner.jar
- p8cjares.jar
- Jace.jar
- (optional) pe.jar

For FileNet 5.x add following JAR files

- Jace.jar
- javaapi.jar
- log4j.jar
- pe.jar
- stax-api.jar
- xlxpScanner.jar
- xlxpScannerUtils.jar

Note: *Add the pe.jar file only if your deployment uses the IBMFileNetProcessEngineConnector service. The new system property should reflect this structure:*

```
[component id].ext=[JAR files and/or folders]
```

For example, using a default FileNet Application Engine installation on a Windows operating system, add the following system property on a new line with no line breaks and end the line with a carriage return:

Note: *The following text contains formatting characters for line breaks. If you copy this text to a location outside this document, remove the formatting characters when you paste it to the new location.*

```
com.adobe.livecycle.ConnectorforIBMFileNet.ext=
C:/Program Files/FileNet/AE/CE_API/lib2/javaapi.jar,
C:/Program Files/FileNet/AE/CE_API/lib2/log4j-1.2.13.jar
```

6 (FileNet Process Engine Connector only) Configure the connection properties for the process engine as follows:

- Using a text editor, create a file with the following content as a single line and end the line with a carriage return:

  (FileNet 4.x and 5.0 only)

  ```
  RemoteServerUrl = cemp:http://[contentserver_IP]:[contentengine_port]/wsi/FNCEWS40DIME/
  ```

  (FileNet 5.2 only)

  ```
  RemoteServerUrl = cemp:http://[contentserver_IP]:[contentengine_port]/wsi/FNCEWS40MTOM/
  ```

- Save the file as WcmApiConfig.properties in a separate folder, and add the location of the folder that contains the WcmApiConfig.properties file to the adobe-component-ext.properties file.

  For example, if you save the file as c:/pe_config/WcmApiConfig.properties, add the path c:/pe_config to the adobe-component-ext.properties file.

  Note: *The filename is case-sensitive.*

7 Locate the login-config.xml file in the following folder and add the following application policy as a child of the <policy> node:

- **(Manually-configured JBoss, single server)***[appserver root]*/server/standard/conf
- **(Manually-configured JBoss, cluster)***[appserver root]*/server/all/conf
- **(Adobe-preconfigured JBoss, single server)***[appserver root]*/server/lc_<dbname>/conf
- **(Adobe-preconfigured JBoss, cluster)***[appserver root]*/server/lc_<dbname>_cl/conf

```
<application-policy name = "FileNetP8WSI">
 <authentication>
 <login-module code = "com.filenet.api.util.WSILoginModule" flag =
        "required" />
 </authentication>
</application-policy>
```

8 (FileNet Process Engine Connector only) If your deployment uses the process engine, add the following node to the login-config file:

```
<application-policy name = "FileNetP8">
    <authentication>
        <login-module code = "com.filenet.api.util.WSILoginModule" flag =
        "required" />
    </authentication>
</application-policy>
```

9 If the application server is not currently running, start the server. Otherwise, stop and then restart the server.

10 If JBoss runs as a service, start (or restart) the JBoss for Adobe LiveCycle ES4 Service.

11 (***Cluster only***) Repeat all previous steps on each instance on the cluster.

12 Open a web browser and enter this URL:

```
http://[host]:[port]/adminui
```

13 Log in using the default user name and password:

User name: administrator

Password: password

14 Click **Services** > **LiveCycle 11 Connector for IBM FileNet**.

15 Provide the Content Engine URL. For example,
`cemp:http://ContentEngineHostNameorIP:port/wsi/FNCEWS40MTOM?jaasConfigurationName=FileNetP8WSI`

16 Provide all of the required FileNet repository information and, under Repository Service Provider Information, select **IBM FileNet Repository Provider**.

If your deployment uses the optional process engine service, under Process Engine Settings, select **Use Process Engine Connector Service** and specify the process engine settings. For more information, click the **Help** link in the upper-right corner of the page.

Note: *The credentials that you provide in this step are validated later when you start the IBM FileNet repository services. If the credentials are not valid, an error is thrown and the services will not start.*

17 Click **Save** and navigate to **Services** > **Applications and Services** > **Service Management**.

18 Select the check box next to each of these services and then click **Start**:

- IBMFileNetAuthProviderService
- IBMFileNetContentRepositoryConnector

- IBMFileNetRepositoryProvider
- IBMFileNetProcessEngineConnector (if configured)

If any of the services do not start correctly, verify the Process Engine settings.

19 Do one of the following tasks:

- To use the FileNet Authorization service (IBMFileNetAuthProviderService) to display content from a FileNet object store in the Resources view of Workbench, continue with this procedure. Using the FileNet Authorization service overrides the default LiveCycle authorization and must be configured to log in to Workbench by using FileNet credentials.
- To use the LiveCycle repository, log in to Workbench by using the LiveCycle super administrator credentials (by default, *administrator* and *password*). The credentials provided in step 16 use the default LiveCycle authorization service for accessing the default repository in this case.

20 Restart your application server.

21 Log in to Administration Console and click **Settings** > **User Management** > **Domain Management**.

22 Click **New Enterprise Domain** and then type a domain ID and name. The domain ID is the unique identifier for the domain. The name is a descriptive name for the domain.

When using MySQL for your LiveCycle database, use only single-byte (ASCII) characters for the ID. (See "Adding enterprise domains" in LiveCycle Administration Help

23 Add a custom authentication provider:

- Click **Add Authentication**.
- In the **Authentication Provider** list, select **Custom**.
- Select **IBMFileNetAuthProviderService** and then click **OK**.

24 Add an LDAP authentication provider:

- Click **Add Authentication**.
- In the **Authentication Provider** list, select **LDAP** and then click **OK**.

25 Add an LDAP directory:

- Click **Add Directory** and, in the **Profile Name** box, type a unique name, and then click **Next**.
- Specify values for the **Server**, **Port**, **SSL**, **Binding**, and **Populate page with** options. If you select **User** for the **Binding** option, you must also specify values for the **Name** and **Password** fields.
- (Optional) Select **Retrieve Base DN** to retrieve base domain names, as required. When finished, click **Next**.
- Configure the user settings, click **Next**, configure group settings as required, and then click **Next**.

  For details about the settings, click **Help** link in the upper-right corner of the page.

26 Click **OK** to exit the Add Directory page, and then click **OK** again.

27 Select the new enterprise domain and click **Sync Now**. Depending on the number of users and groups in your LDAP network and the speed on your connection, the synchronization process may take several minutes.

(Optional) To verify the status of the synchronization, click **Refresh** and view the status in the **Current Sync State** column.

28 Navigate to **Settings** > **User Management** > **Users and Groups**.

29 Search for users that were synchronized from LDAP and perform these tasks:

- Select one or more users and click **Assign Role**.

- Select one or more LiveCycle roles and click **OK**.
- Click **OK** a second time to confirm the role assignment.

Repeat this step for all users you want to assign roles to. For more information, click the **Help** link in the upper-right corner of the page.

30 Start Workbench and log in using the following credentials for the IBM FileNet repository:

User name:*[username]@[repository_name]*

Password: *[password]*

The FileNet object store should now be visible in the Resources view within Workbench. If you do not log in using the *username@repository name*, Workbench attempts to log in to the default repository specified in step 16.

31 (Optional) If you intend to install the LiveCycle Samples for Connector for IBM FileNet, create a FileNet object store named *Samples* and install the samples in that object store.

After you configure Connector for IBM FileNet, it is recommended that you see LiveCycle Administration Help for information about configuring Workbench functions properly with your FileNet repository.

6.12 Isolating JBoss Clusters

There are a lot of JBoss services that create multiple JGroup channels services. These channels should only communicate with specific channels.

To isolate JGroups clusters from other clusters on the network, ensure that

- The channels in the various clusters use different group names. Use `./run.sh -g QAPartition -b <ipaddress> -c all` to create unique groups.
- The channels in the various clusters use different multicast addresses. Use `/run.sh -u <UDP group Ip address> -g QAPartition -b <ipaddress> -c all` to control the multicast address.
- The channels in each cluster use different multicast ports. Use `/run.sh -u <UDP group Ip address> -g QAPartition -b <ipaddress> -c all \\-Djboss.jgroups.udp.mcast_port=12345 -Djboss.messaging.datachanneludpport=23456` to control the muticast sockets.

  See, Isolating JGroups Channels in jbossclustering guide at http://docs.jboss.org/ for detailed information to isolate JBoss Clusters

6.13 (Optional)Enable JMX console security

In the default setup of LiveCycle, JBoss JMX console security is disabled. To enable the security, follow the steps mentioned below:

1 Shut down the application server.

2 Navigate to the *[appserver root]*/server/<profile_name>/deploy directory and open the jmx-invoker-service.xml file in a text editor.

3 Ensure that the following line is not commented out in the `invoke` section:

```
<interceptor code="org.jboss.jmx.connector.invoker.AuthenticationInterceptor"
securityDomain="java:/jaas/jmx-console"/>
```

4 Save and close the file.

5 Create a new file, work-manager.properties, at *[appserver root]*/server/.

6 Open work-manager.properties file in a text editor and add following code:

```
    adobe.work-
manager.jboss.jmx.lookup.java.naming.factory.initial=org.jboss.security.jndi.JndiLo
ginInitialContextFactory
    adobe.work-manager.jboss.jmx.lookup.java.naming.provider.url=jnp://localhost:1099/
    adobe.work-manager.jboss.jmx.lookup.java.naming.security.credentials=<password>
    adobe.work-manager.jboss.jmx.lookup.java.naming.security.principal=<username>
    adobe.work-manager.jboss.jmx.lookup.java.naming.security.protocol=jmx-console
```

Note: *Ensure that identical credentials are mentioned in jmx-console-users.properties file and in work-manager.properties file. The default credentials are admin/admin.*

7 Save and close the file.

8 Navigate to the *[appserver root]*/server/<profile_name>/conf/props directory and open jmx-console-users.properties file in a text editor.

9 Ensure that an entry that contains credentials used in the work-manager.properties file is not commented out.

10 Save and close the file.

11 Navigate to *[appserver root]*/bin and open run.conf.bat file in a text editor and add following code:

```
set "JAVA_OPTS=%JAVA_OPTS%  -Dadobe.workmanager.properties = <path of the work-
manager.properties file>
```

12 Save and close the file.

13 Start the application server.

Chapter 7: Advanced Production Configuration

This section describes advanced tuning for Adobe® LiveCycle® Output 11, Adobe® LiveCycle® Forms Standard 11, and PDF Generator. This section should be completed only on a production system by an advanced application server administrator.

7.1 Configuring pool size for Output and Forms

The current default value for PoolMax is 4. The actual value to set depends on the hardware configuration and the expected usage in your environment.

For optimal use, we recommend that the lower limit of PoolMax not be less than the number of CPUs that are available. The upper limit must be determined by the load pattern on your server. Generally, the upper limit should be set to twice the number of CPUs cores on your server.

Modify the existing PoolMax value

1 Using a text editor, edit the JBoss startup script.

2 Add the following properties for `ConvertPdf`:

- `com.adobe.convertpdf.bmc.POOL_MAX=[new value]`
- `com.adobe.convertpdf.bmc.MAXIMUM_REUSE_COUNT=5000`
- `com.adobe.convertpdf.bmc.REPORT_TIMING_INFORMATION=true`
- `com.adobe.convertpdf.bmc.CT_ALLOW_SYSTEM_FONTS=true`

3 Add the following properties for `XMLFM`:

- `com.adobe.xmlform.bmc.POOL_MAX=[new value]`
- `com.adobe.xmlform.bmc.MAXIMUM_REUSE_COUNT=5000`
- `com.adobe.xmlform.bmc.REPORT_TIMING_INFORMATION=true`
- `com.adobe.xmlform.bmc.CT_ALLOW_SYSTEM_FONTS=true`

7.2 PDF Generator

PDF Generator is capable of doing multiple PDF conversions simultaneously for some types of input files. This is enforced through the use of stateless session beans.

7.2.1 Configuring EJB Pool Size

Four different stateless session beans exist for enforcing independent pool sizes for the following types of input files:

- Adobe PostScript® and Encapsulated PostScript (EPS) files
- Image files, such as BMP, TIFF, PNG, and JPEG files

- OpenOffice files
- All other file types (except HTML files), such as Microsoft Office, Photoshop®, PageMaker®, and FrameMaker® files

The pool size for HTML-to-PDF conversions is not managed through the use of stateless session beans.

The default pool size for PostScript and EPS files and for image files is set to 3, and the default pool size for OpenOffice and other file types (except HTML) is set to 1.

You can configure the PS/EPS and image pool size to a different value based on your server hardware configuration, such as the number of CPUs, the number of cores within each CPU, and so on. However, it is mandatory that the pool size for the OpenOffice and other file types be left unchanged at 1 for proper functioning of PDF Generator.

This section describes how the pool size for PS2PDF and Image2PDF can be configured for each of the supported application servers.

The text that follows assumes that the following two LiveCycle application EARs are deployed on the application server:

- adobe-livecycle-jboss.ear
- adobe-livecycle-native-jboss-*[platform]*.ear

  where *[platform]* should be replaced with one of the following strings, depending on your operating system:
- (Windows) x86_win32
- (Linux) x86_linux
- (SunOS™) sparc_sunos

Configure the pool size for PS2PDF and Image2PDF
Refer to Distiller service settings and Generate PDF service settings under "Managing services" in the LiveCycle Administration Help.

7.3 Enabling CIFS on Windows

You will need to manually configure the Windows Server machine that host LiveCycle.

Note: *Ensure that the server has a static IP address.*

On Windows machines, you need to do the following:

7.3.1 Enable NetBIOS over TCP/IP

You need to enable NetBIOS over TCP/IP so that clients connecting to the LiveCycle Server can have their requests revolved for the server host name.

1. In the **Local Area Connection Properties** dialog box, on the **General** tab, select **Internet Protocol**, and then click **Properties**.
2. In the **General** tab of the **Internet Protocol (TCP/IP) Properties** dialog box, ensure that the server has a static IP address. Click **Advanced**.
3. In the **Advanced TCP/IP Settings** dialog box, select the **WINS** tab and select **Enable NetBIOS over TCP/IP**.

7.3.2 Add additional IP addresses

1 In the **Local Area Connection Properties** dialog box, on the **General** tab, select **Internet Protocol**, and then click **Properties**.

2 In the **General** tab of the **Internet Protocol (TCP/IP) Properties** dialog box, ensure that the server has a static IP address. Click **Advanced**.

3 In the **Advanced TCP/IP Settings** dialog box, select the **IP Settings** tab and click **Add**.

4 Specify a static IP address and click **Add.**

7.3.3 Disable File and Printer Sharing (Windows Server 2008 only)

- Go to **Network Settings**, deselect **File and Printer Sharing for Microsoft Clients,** and c lick **Apply**.

Chapter 8: Appendix - Install Command Line Interface

8.1 Overview

LiveCycle provides a command line interface (CLI) for the installation program. The CLI is intended to be used by advanced users of LiveCycle or in server environments which do not support the use of the Graphical User Interface (GUI) of the installation program. The CLI runs in console mode with one interactive session for all install operations.

Before you install the modules using the CLI install option, ensure that you have prepared your environment required to run LiveCycle according to the Preparing guide for fresh single server installation, cluster setup, or upgrade, as appropriate. The completed LiveCycle documentation is available at http://www.adobe.com/go/learn_lc_documentation_11.

For an overview of the installation process, see "3.1 Before you begin" on page 5.

After you start the installation process, follow the on-screen instructions to choose your installation options. Respond to each prompt to proceed to the next step in the installation.

Note: *If you want to change a choice that you made on a previous step, type* `back`*. You can cancel the installation at any time by typing* `quit`*.*

8.2 Install LiveCycle

1. Open a command prompt and navigate to the folder in the installation media or your hard disk that contains the installer executable:
   - (Windows) server\Disk1\InstData\Windows_64\VM
   - (Linux) server/Disk1/InstData/Linux/NoVM
   - (Solaris) server/Disk1/InstData/Solaris/NoVM
2. Open a command prompt and run the following command:
   - (Windows) `install.exe -i console`
   - (Non-Windows) `./install.bin -i console`

     Note: *Entering the command without the* `-i console` *option launches the GUI-based installer.*
3. Respond to the prompts as described in the following table:

Prompt	Description
Choose Locale	Select the locale for the installation to use by entering a value between 1 and 3. You can select the default value by pressing **Enter**. The options are Deutsch, English, and Français. English is the default language.
Choose Install Folder	On the Destination screen, press **Enter** to accept the default directory or type the new installation directory location. Default install folders are: (Windows): C:\Adobe\Adobe LiveCycle ES4 (Non-Windows): /opt/adobe/adobe_livecycle_es4 Do not use accented characters in the directory name. Otherwise, the CLI will ignore the accents and create a directory after modifying the accented characters.
Choose Operating System	**(Windows only)** Select the operating system that you want to install LiveCycle to. The options are Windows and Linux, Solaris. Windows (Local) is the default. Select a different target operating system so that you can use the installation on Windows as the staging platform to deploy LiveCycle on to another operating system.
LiveCycle Server License Agreement	Press **Enter** to read through the pages of the license agreement. If you agree to the agreement, type `Y` and press **Enter**.
Pre-Installation Summary	Review the installation choices you have made and press **Enter** to continue installation with the choices you have made. Type `back` to go back to previous steps and change any of the settings.
Ready To Install	Installer displays the installation directory. Press **Enter** to start the installation process.
Installing	During the installation process, the progress bar advances to indicate the progress of installation.
Configuration Manager	Press **Enter** to complete the installation of LiveCycle. You can run the Configuration Manager in GUI mode by invoking the following script: (Windows): `C:\Adobe\Adobe LiveCycle ES4\configurationManager\bin\ConfigurationManager.bat` (Non-Windows): `/opt/adobe/adobe_livecycle_es4/configurationManager/bin/ConfigurationManager.sh`
Installation Complete	The installation completion screen displays the status and the location of install. Press **Enter** to exit the installer.

8.3 Error logs

If an error occurs, you can review the install.log in the log directory of your installation:

- (Windows) *[LiveCycle root]*\log
- (Linux, Solaris) *[LiveCycle root]*/log

  For information about errors that may occur during the installation, see the appropriate troubleshooting guide.

8.4 Uninstalling LiveCycle in console mode

Note: *If you had installed LiveCycle using the command line option, you can uninstall LiveCycle ES4 only by running the uninstaller from the command line. If you want a silent uninstallation, omit the "-i console" flag.*

1 Open a command prompt, and navigate to the directory which contains the uninstall script:

Note: *On UNIX systems, you should manually navigate to the directory that contains the uninstall script because the directory name contains spaces.*

- (Windows) `cd C:\Adobe\Adobe LiveCycle ES4\Uninstall_Adobe LiveCycle ES4`
- (UNIX-like systems) `cd /opt/adobe/adobe_livecycle_es4/Uninstall_Adobe Livecycle ES4`

2 Type the following command at the prompt and press Enter:

- (Windows) `Uninstall Adobe LiveCycle ES4 -i console`
- (Linux, Solaris) `./Uninstall Adobe Livecycle ES4 -i console`

3 Follow the on-screen instructions.

Prompt	Description
Uninstall LiveCycle ES4	Press **Enter** to continue uninstallation. Enter **quit** to close the uninstall program.
Uninstalling... Uninstall Complete	After the uninstallation starts, the rest of the uninstallation process is completed and the cursor returns to the prompt. Note that some items may not be removed. Also, any folder created after installing LiveCycle are not removed. You must remove these files and folders manually.

Chapter 9: Appendix - Configuration Manager Command Line Interface

LiveCycle provides a Command Line Interface (CLI) for the Configuration Manager. The CLI is intended to be used by advanced users of LiveCycle, for example in server environments which do not support the use of the Graphical User Interface (GUI) of the Configuration Manager.

9.1 Order of operations

The Configuration Manager CLI must follow the same order of operations as the GUI version of the Configuration Manager. Ensure that you use the CLI operations in this order:

1. Configure LiveCycle.
2. Configure CRX
3. Manually deploy the configured EAR files.
4. Initialize LiveCycle.
5. Validate LiveCycle.
6. Deploy the LiveCycle modules.
7. Validate the LiveCycle module deployment.
8. Check system readiness for PDF Generator.
9. Add administrator user for PDF Generator.
10. Configure Connector for IBM Content Manager.
11. Configure Connector for IBM FileNet.
12. Configure Connector for EMC Documentum.
13. Configure Connector for SharePoint.

9.2 Command Line Interface property file

The Configuration Manager CLI requires a property file containing the defined properties for your LiveCycle environment. The template for the properties file, cli_propertyFile_template.txt, is located in the *[LiveCycle root]*/configurationManager/bin folder. You must create a copy of this file and edit the values. You can customize this file based on the Configuration Manager operations you intend to use. The following section describes the properties and values required.

You should create the property file according to your installation. Use one of the following methods.

- Create a property file and populate the values according to your installation and configuration scenarios.
- Use the property file cli_propertyFile_template.txt file as a template and edit the values based on the Configuration Manager operations you intend to use.

- Use the GUI of the Configuration Manager and then use the property file created by the GUI version as the CLI version property file. When you run the *[LiveCycle root]*/configurationManager/bin/ConfigurationManager.bat/sh file, the userValuesForCLI.properties file is created in the *[LiveCycle root]*/configurationManager/config directory. You can use this file as input for the Configuration Manager CLI.

  Note: *In the CLI properties file, you must use the escape character (\) for Windows paths directory separator (\). For example, if the Fonts folder to be mentioned is C:\Windows\Fonts, in the Configuration Manager CLI script, you should enter it as* `C:\\Windows\\Fonts`.

  Note: *The following modules depend on ALC-LFS-ContentRepository. If you are using the cli_propertyFile_template.txt as template then either remove the ALC-LFS-ContentRepository from excludedSolutionComponents list or add the following LFS in excludedSolutionComponents list:*

  - *ALC-LFS-ProcessManagement*
  - *ALC-LFS-CorrespondenceManagement*
  - *ALC-LFS-ContentRepository*
  - *ALC-LFS-MobileForms*
  - ALC-LFS_FormsManager

9.3 General configuration properties

9.3.1 Common properties

Common properties are:

LiveCycle Server specific properties: Required for the Initialize LiveCycle and Deploy LiveCycle Components operations.

These properties are required for the following operations:

- Initialize LiveCycle
- Deploy LiveCycle components.

Property	Values	Description
LiveCycle Server specific properties		
LCHost	String	The hostname of the server where LiveCycle will be deployed.
LCPort	Integer	The web port number where LiveCycle will be deployed.

Property	Values	Description
excludedSolutionComponents	String. Values include: ALC-LFS-Forms, ALC-LFS-ConnectorEMCDocumentum, ALC-LFS-ConnectorIBMFileNet, ALC-LFS-ConnectorIBMContentManager, ALC-LFS-DigitalSignatures, ALC-LFS-DataCapture, ALC-LFS-Output, ALC-LFS-PDFGenerator, ALC-LFS-ProcessManagement, ALC-LFS-ReaderExtensions, ALC-LFS-RightsManagement ALC-LFS-CorrespondenceManagement, ALC-LFS-ContentRepository, ALC-LFS-MobileForms, ALC-LFS_FormsManager	(Optional) List the LiveCycle modules you do not want to configure. Specify the excluded modules in a comma separated list.
includeCentralMigrationService	true: to include service false: to exclude servcie	The property to include or exclude Central Migration Bridge Service.
CRX Content repository The following properties are specified in the `cli_propertyFile_crx_template.txt` file.		
contentRepository.rootDir		Path of the CRX repository.

9.3.2 Configure LiveCycle properties

These properties only apply to the configure LiveCycle operation.

Property	Values	Description
AdobeFontsDir	String	Location of the Adobe server fonts directory. This path must be accessible from the server being deployed to.
customerFontsDir	String	Location of the customer fonts directory. This path must be accessible from the server being deployed to.
systemFontsDir	String	Location of the system fonts directory. This path must be accessible from the server being deployed to.

Property	Values	Description
LCTempDir	String	Location of the temporary directory. This path must be accessible from the server being deployed to.
LCGlobalDocStorageDir	String	The global document storage root directory. Specify a path to an NFS shared directory used to store long-lived documents and to share them among all cluster nodes. This path must be accessible from the server being deployed to.
EnableDocumentDBStorage	true or false Default: false	Enables or disables document storage in database for persistent documents. Even if you enable document storage in database, you will need the file system directory for GDS.

9.3.3 Configure or validate application server properties

9.3.3.1 Configure JBoss properties

If you are installing LiveCycle with a JBoss application server, you must manually configure JBoss. See Manually configuring JBoss section in, Preparing to Install LiveCycle (Single Server) Guide. Use the Adobe preconfigured JBoss provided on the LiveCycle DVD, download from the internet or use the JBoss turnkey option.

9.3.4 Initialize LiveCycle properties

These initialize LiveCycle properties only apply to the initialize LiveCycle operation.

Property	Values	Description
For more information, see "9.3.1 Common properties" on page 59		

9.3.5 Deploy LiveCycle Components properties

These properties apply to the following operations:

- Deploy LiveCycle Components
- Validate LiveCycle Component Deployment
- Validate LiveCycle Server.

Property	Values	Description
You must configure the LiveCycle Server Information section. For more information, see Common properties		
LCAdminUserID	String	The user ID to assign to the LiveCycle Administrator user. This User ID is used to login to the Administrator Console.
LCAdminPassword	String	The password to assign to the LiveCycle Administrator user. This password is used to login to the Administrator Console.

9.3.6 Add administrator user for PDF Generator

These properties apply only to the adding administrator user for PDF Generator operation. These properties are present in cli_propertyFile_pdfg_template.txt

Property	Values	Description
LCHost	String	Hostname where LiveCycle Server is installed.
LCPort	Integer	Port number where LiveCycle application server is configured
LCAdminUserID	String	The user ID to assign to the LiveCycle Administrator user. This User ID is used to login to the Administrator Console.
LCAdminPassword	String	The password to assign to the LiveCycle Administrator user. This password is used to login to the Administrator Console.
LCServerMachineAdminUser	String	The user ID of the Administrator user of the Operation System hosting LiveCycle
LCServerMachineAdminUserPasswd	String	The password of the Administrator user of the Operation System hosting LiveCycle

9.3.7 Configure Connector for IBM Content Manager

Property	Values	Description
LCHost	String	Hostname where LiveCycle Server is installed.
LCPort	Integer	Port number where LiveCycle application server is configured
LCAdminUserID	String	The user ID to assign to the LiveCycle Administrator user. This User ID is used to login to the Administrator Console.
LCAdminPassword	String	The password to assign to the LiveCycle Administrator user. This password is used to login to the Administrator Console.
jndiPortNumber	String	JNDI port corresponding to LiveCycle application server.
jboss.clientjar.location	String	The location of the jbossall-client.jar file (JBoss only)
CDVTopology.appserverrootdir	String	The root directory of the application server instance that you are configuring on a remote server (on which you plan to deploy LiveCycle)
ConfigureIBMCM	true or false	Specify true to configure Connector for IBM Content Manager
IBMCMClientPathDirectory	String	Location of IBM Content Manager client installation directory.
DataStoreName	String	Name of the DataStore of IBM Content Manager Server that you want to connect to

Property	Values	Description
IBMCMUsername	String	The user name assign to the IBM Content Manager Administrator user. This User ID is used to login to the IBM Content Manager.
IBMCMPassword	String	The password to assign to the IBM Content Manager Administrator user. This password is used to login to the IBM Content Manager.
ConnectionString	String	Additional arguments used in the connection string to connect to IBM Content Manager(Optional).

9.3.8 Configure Connector for IBM FileNet

Property	Values	Description
LCHost	String	Hostname where LiveCycle Server is installed.
LCPort	Integer	Port number where LiveCycle application server is configured
LCAdminUserID	String	The user ID to assign to the LiveCycle Administrator user. This User ID is used to login to the Administrator Console.
LCAdminPassword	String	The password to assign to the LiveCycle Administrator user. This password is used to login to the Administrator Console.
jndiPortNumber	String	JNDI port corresponding to LiveCycle application server.
jboss.clientjar.location	String	The location of the jbossall-client.jar file (JBoss only)
CDVTopology.appserverrootdir	String	The root directory of the application server instance that you are configuring on a remote server (on which you plan to deploy LiveCycle)
ConfigureFilenetCE	true or false	Specify true to configure Connector for IBM Filenet
FilenetConfigureCEVersion	String	The FileNet client version to configure. Specify FilenetClientVersion4.0 or FilenetClientVersion5.0
FilenetCEClientPathDirectory	String	Location of IBM Filenet Content Manager client installation directory.
ContentEngineName	String	Hostname or IP address of the machine where IBM Filenet Content Engine is installed
ContentEnginePort	String	The port number used by IBM Filenet Content Engine
CredentialProtectionSchema	CLEAR or SYMMETRIC	Specify the level of protection.
EncryptionFileLocation	String	Location of the encryption file. This is required only when you select SYMMETRIC option for CredentialProtectionSchema attribute. Use a forward slash (/) or double backward slashes (\\) as a path seperator.

Property	Values	Description
DefaultObjectStore	String	Name of the ObjectStore for the Connector for IBM Filenet Content Server.
FilenetContentEngineUsername	String	The user ID to connect to the IBM FileNet Content server. The user ID with read-access privileges would be allowed to connect to the Default object Store.
FilenetContentEnginePassword	String	The password to assigned to the IBM FileNet user. This password is used to connect to Default object Store.
ConfigureFilenetPE	true or false	Specify true to configure Connector for IBM FileNet
FilenetPEClientPathDirectory	String	Location of IBM FIleNet client installation directory
FilenetProcessEngineHostname	String	Hostname or IP address of the process router.
FilenetProcessEnginePortNumber	Integer	Port number for IBM FileNet Content Server
FilenetPERouterURLConnectionPoint	String	Name of the process router.
FilenetProcessEngineUsername	String	The user ID to connect to the IBM FileNet Content Server
FilenetProcessEnginePassword	String	The password to connect to the IBM FileNet Content Server

9.3.9 Configure Connector for EMC Documentum

Property	Values	Description
LCHost	String	Hostname where LiveCycle Server is installed.
LCPort	Integer	Port number where LiveCycle application server is configured
LCAdminUserID	String	The user ID to assign to the LiveCycle Administrator user. This User ID is used to login to the Administrator Console.
LCAdminPassword	String	The password to assign to the LiveCycle Administrator user. This password is used to login to the Administrator Console.
jndiPortNumber	String	JNDI port corresponding to LiveCycle application server.
jboss.clientjar.location	String	The location of the jbossall-client.jar file (JBoss only)
CDVTopology.appserverrootdir	String	The root directory of the application server instance that you are configuring on a remote server (on which you plan to deploy LiveCycle)
ConfigureDocumentum	true or false	Specify true to configure Connector for EMC Documentum

Property	Values	Description
DocumentumClientVersion	String	The EMC Documentum client version to configure. Specify DocumentumClientVersion6.0 or DocumentumClientVersion6.5
DocumentumClientPathDirectory	String	Location of EMC Documentum client installation directory
ConnectionBrokerHostName	String	Hostname or IP address of the EMC Documentum Content Server.
ConnectionBrokerPortNumber	String	Port number for EMC Documentum Content Server
DocumentumUsername	String	The user ID to connect to the EMC Documentum Content Server.
DocumentumPassword	String	The password ID to connect to the EMC Documentum Content Server.
DocumentumDefaultRepositoryName	String	Name of the default repository of MC Documentum Content Server

9.3.10 Configure Connector for Microsoft SharePoint

Property	Values	Description
LCHost	String	Hostname where LiveCycle Server is installed.
LCPort	Integer	Port number where LiveCycle application server is configured
LCAdminUserID	String	The user ID to assign to the LiveCycle Administrator user. This User ID is used to login to the Administrator Console.
LCAdminPassword	String	The password to assign to the LiveCycle Administrator user. This password is used to login to the Administrator Console.
jndiPortNumber	String	JNDI port corresponding to LiveCycle application server.
jboss.clientjar.location	String	The location of the jbossall-client.jar file (JBoss only)
CDVTopology.appserverrootdir	String	The root directory of the application server instance that you are configuring on a remote server (on which you plan to deploy LiveCycle)
ConfigureSharePoint	true or false	Specify true to configure Connector for Microsoft SharePoint
SharePointServerAddress	String	Hostname or IP address of the Sharepoint Server
SharePointUsername	String	The user ID to connect to the Sharepoint Server

Property	Values	Description
SharePointPassword	String	The password to connect to the Sharepoint Server
SharePointDomain	String	The Domain Name of the Sharepoint Server
ConnectionString	String	Additional arguments used in the connection string to connect to the Sharepoint Server(optional

9.3.11 Command Line Interface Usage

Once you have configured your property file, you must navigate to the *[LiveCycle root]*/configurationManager/bin folder.

To view a complete description of the Configuration Manager CLI commands, type: `ConfigurationManagerCLI help <command name>`.

9.3.11.1 Configure CRX CLI Usage

The Configure CRX Repository requires the following syntax:

configureCRXRepository -f <*propertyFile*>

Where:

- -f <*propertyFile*>: A property file containing the required arguments. For more information on creating a property file, see Command Line Interface property file.

9.3.11.2 Manually deploy configured EAR files

For detailed instructions to manually deploy configured ear files, see "5.3 Deploying to JBoss Application Server" on page 16

9.3.11.3 Initialize LiveCycle CLI Usage

The initialize LiveCycle operation requires the following syntax:

initializeLiveCycle -f <*propertyFile*>

Where:

- -f <*propertyFile*>: A property file containing the required arguments. For more information on creating a property file, see Command Line Interface property file.

9.3.11.4 Validate LiveCycle Server CLI Usage

The Validate LiveCycle Server operation is optional and requires the following syntax:

validateLiveCycleServer -f <*propertyFile*> *-LCAdminPassword* <*password*>

Where:

- -f <*propertyFile*>: A property file containing the required arguments. For more information on creating a property file, see Command Line Interface property file.
- -LCAdminPassword <password>: Allows you to set the Admin password on the command line. If this argument is present, it will override the targetServer.adminPassword property in the property file.

9.3.11.5 Deploy LiveCycle Components CLI Usage

The Deploy LiveCycle Components operation requires the following syntax:

deployLiveCycleComponents -f <*propertyFile*> *-LCAdminPassword* <*password*>

Where:

- -f <*propertyFile*>: A property file containing the required arguments. For more information on creating a property file, see Command Line Interface property file.
- -LCAdminPassword <password>: Allows you to set the Admin password on the command line. If this argument is present, it will override the targetServer.adminPassword property in the property file.

9.3.11.6 Validate LiveCycle Component Deployment CLI Usage

The Validate LiveCycle Component Deployment operation is optional and requires the following syntax:

validateLiveCycleComponentDeployment -f <*propertyFile*> *-LCAdminPassword* <*password*>

Where:

- -f <*propertyFile*>: A property file containing the required arguments. For more information on creating a property file, see Command Line Interface property file.
- -LCAdminPassword <password>: Allows you to set the Admin password on the command line. If this argument is present, it will override the targetServer.adminPassword property in the property file.

9.3.11.7 Check system readiness for PDF Generator

The Checking system readiness for PDF Generator operation requires the following syntax:

pdfg-checkSystemReadiness

9.3.11.8 Adding administrator user for PDF Generator

The adding administrator user for PDF Generator operation requires the following syntax:

pdfg-addAdminUser -f <*propertyFile*>

Where:

- -f <*propertyFile*>: A property file containing the required arguments. For more information on creating a property file, see Command Line Interface property file.

9.3.11.9 Configure Connector for IBM Content Manager

The Configure Connector for IBM Content Manager operation is optional and requires the following syntax:

IBMCM-configurationCLI -f <propertyFile>

Where:

- -f <*propertyFile*>: A property file containing the required arguments. For more information on creating a property file, see Command Line Interface property file.

  Important: *Modify the <propertyFile> called cli_propertyFile_ecm_ibmcm_template.txt located in the [LiveCycle root]\configurationManager\bin\ directory.*

1. Copy the *adobe-component-ext.properties* file from *[LiveCycle root]*/configurationManager/configure-ecm/jboss to the following [appserver root]/bin directory.
2. Restart the Application Server.

3 Start the following services from LiveCycle Administration Console

- IBMCMAuthProviderService
- IBMCMConnectorService

9.3.11.10 Configure Connector for IBM FileNet

The Configure Connector for IBM FileNet operation is optional and requires the following syntax:

filenet-configurationCLI -f <propertyFile>

Where:

- -f <*propertyFile*>: A property file containing the required arguments. For more information on creating a property file, see Command Line Interface property file.

  Important: *Modify the <propertyFile> called cli_propertyFile_ecm_filenet_template.txt located in the [LiveCycle root]\configurationManager\bin\ directory.*

Perform the following steps manually to complete the configuration for Connector for IBM Content Manager.

1 Copy the *adobe-component-ext.properties* file from *[LiveCycle root]*/configurationManager/configure-ecm/jboss to the following [appserver root]/bin directory.

2 Locate the login-config.xml file in the *[appserver root]*/server/[profile]/conf folder and add to it contents of login-config.xml file available in *[LiveCycle root]*/configurationManager/configure-ecm/jboss directory.

  Default jboss setup comes up with a [profile] value as "all". However, for Adobe Configured Jboss use [lc_DatabaseName] (e.g. lc_mysql, lc_oracle).

3 Copy the logkit.jar file from [appserver root]/client to the following [appserver root]/server/[profile]/lib directory. Default jboss setup comes up with a [profile] value as "all". However, for Adobe Configured Jboss use [lc_DatabaseName] (e.g. lc_mysql, lc_oracle).

4 (**Only for FileNet 4.x**) Add the Java option -Dwasp.location=[FileNetClient root]/wsi to the Application Server startup options.

5 Restart the Application Server.

6 Start the following services from LiveCycle Administration Console

- IBMFileNetAuthProviderService
- IBMFileNetContentRepositoryConnector
- IBMFileNetRepositoryProvider
- IBMFileNetProcessEngineConnector(If configured)

9.3.11.11 Configure Connector for EMC Documentum

The Configure Connector for EMC Documentum operation is optional and requires the following syntax:

documentum-configurationCLI -f <propertyFile>

Where:

- -f <*propertyFile*>: A property file containing the required arguments. For more information on creating a property file, see Command Line Interface property file.

  Important: *Modify the <propertyFile> called cli_propertyFile_ecm_documentum_template.txt located in the [LiveCycle root]\configurationManager\bin\ directory.*

Perform the following steps manually to complete the configuration for Connector for EMC Documentum.

1 Copy the *adobe-component-ext.properties* file from *[LiveCycle root]*/configurationManager/configure-ecm/jboss to the following [appserver root]/bin directory.

2 Restart the Application Server.

3 Start the following services from LiveCycle Administration Console

- EMCDocumentumAuthProviderService
- EMCDocumentumRepositoryProvider
- EMCDocumentumContentRepositoryConnector

9.3.11.12 Configure Connector for Microsoft SharePoint

The Configure Connector for Microsoft SharePoint operation is optional and requires the following syntax:

sharepoint-configurationCLI -f <propertyFile>

Where:

- -f <*propertyFile*>: A property file containing the required arguments. For more information on creating a property file, see Command Line Interface property file.

  Important: *Modify the <propertyFile> called cli_propertyFile_ecm_sharepoint_template.txt located in the [LiveCycle root]\configurationManager\bin\ directory.*

9.4 Examples Usage

From the C:\Adobe\Adobe LiveCycle ES4\configurationManager\bin, type:

```
ConfigurationManagerCLI configureLiveCycle -f cli_propertyFile.txt
```

Where *cli_propertyFile.txt* is the name of the property file you created.

9.5 Configuration Manager CLI Logs

If an error occurs, you can review the CLI logs located here in the *[LiveCycle root]*\configurationManager\log folder. The log file generated will have a naming convention such as lcmCLI.0.log where the number in the filename (0) will increment when the log files are rolled over.

9.6 Next steps

If you used Configuration Manager CLI to configure and deploy LiveCycle, you can now do the following tasks:

- Verify the deployment. (See "6.1.3 Verify the deployment" on page 18.)
- Access Administration Console. (See "6.1.3.1 Accessing LiveCycle Administration Console" on page 18.)
- Configure LiveCycle modules to access LDAP. (See "6.6 Configuring LDAP access" on page 36.)

Chapter 10: Appendix - Configuring JBoss as a Windows Service

This appendix describes how you can configure the JBoss application server to run as a Windows service using the JBoss Web Native Connectors. Use this procedure on Windows Server 2008, both 32-bit and 64-bit versions.

10.1 Download the Web Native Connector

1 Download the JBoss Web Native Connector for Windows from the *JBoss Web Native Connectors - Current packages* download page. Depending upon your Windows version, download either of the following files:

- (64-bit): http://download.jboss.org/jbossweb/2.0.8.GA/jboss-native-2.0.8-windows-x64-ssl.zip
- (32-bit): http://download.jboss.org/jbossweb/2.0.8.GA/jboss-native-2.0.8-windows-x86-ssl.zip

2 Extract the ZIP file and copy all contents of the \bin folder (except the \native folder) to the \bin folder of your JBoss installation folder.

3 Open the `service.bat` file in a text editor and update the variables.

You should update the variables for Service Name (SVCNAME), Service Display (SVCDISP) and Service Description (SVCDESC) with values that reflect your JBoss environment. For example, if your JBoss version is 5.1, enter the following:

```
set SVCNAME=JBAS51SVC

set SVCDISP=JBossAS 5.1 for Adobe LiveCycle ES4

set SVCDESC=JBoss Application Server 5.1 GA/ Platform: Windows x64
```

4 In the `:cmdStart` section, locate and edit the `call run.bat` line to add the configuration name and bind IP address (0.0.0.0 for binding to all IP addresses of the server) such as follows:

```
call run.bat -c standard -b 0.0.0.0 < .r.lock >> run.log 2>&1
```

5 Repeat the edits in step 4 for the `:cmdRestart` section:

```
call run.bat -c standard -b 0.0.0.0 < .r.lock >> run.log 2>&1
```

6 Save and close the file.

Note: *Specify JBoss cluster arguments in Step 4 and 5 to include the JBoss instance in the cluster. For detailed information about JBoss cluster arguments, see Running JBoss in a cluster*

10.2 Install the Windows service

1 From the `\bin` folder of JBoss, create the Windows service using the following command:

```
service.bat install
```

If the command is successful, you will get a response such as:

```
Service JBossAS 5.1 for Adobe LiveCycle ES4 installed
```

2 Check the Services applet in Windows Control Panel for a new service listed as *JBossAS 5.1 for Adobe LiveCycle ES4* which is the value of the SVCDISP variable in the `service.bat` file.

3 Using the Services applet in Windows Control Panel, set the *Startup type* to `Automatic`.

4 *(Optional)* In the *Recovery* tab, set the *First failure* and *Second failure* recovery options such as *Restart the Service* and *Restart the Computer* respectively.

Note: *If necessary, you can change the Logon as value from the default Local System account to another user or service account.*

10.3 Start and stop JBoss Application Server as a Windows service

Start JBoss as a Windows service

❖ On the Windows server, select **Start** > **Control Panel** > **Administrative Tools** > **Services**, then select the Windows service for JBoss Application Server and click **Start**.

Note: *When starting JBoss Application Server as a Windows service, the console output is redirected to the file `run.log`. You can inspect the file to discover any errors that occur during service startup.*

Stop JBoss as a Windows service

❖ On the Windows server, select **Start** > **Control Panel** > **Administrative Tools** > **Services**, then select the Windows service for JBoss Application Server and click **Stop**.

Note: *When stopping JBoss Application Server as a Windows service, the console output is redirected to the file `run.log`. You can inspect the file to discover any errors that occur during service shutdown.*

10.4 Verify the installation

1 Start the service from the Services applet in Windows Control Panel.

2 Watch (tail) the `[appserver root]\<profile_name>\logs\server.log` file to make sure that the service starts successfully.

3 Shutdown the service from the Services applet in Windows Control Panel and verify that it is shut down successfully.

4 Make sure that you are able to restart the service from the Services applet in Windows Control Panel.

10.5 Additional configuration

In addition to these steps, you can also perform additional configuration steps using either the Services applet in Windows Control Panel or by using the built-in Windows Service Configuration utility (sc).

For example, if you have a Microsoft SQL Server as the database, and the database service runs on the same machine instance, you can create a dependency on that service with the following command:

```
sc config JBAS51SVC depend= MSSQL$MYSERVER
```

Update the `MSSQL$MYSERVER` variable with service name of the Microsoft SQL Server 2005 service running on the same server instance.

Note: *Ensure that there is no space before the = sign but after the = sign.*

If the command is successful, you will get a response such as follows:

```
[SC] ChangeServiceConfig SUCCESS
```

Chapter 11: Appendix - Configuring the Connector for Microsoft SharePoint on the SharePoint Server

The Connector for Microsoft SharePoint allows you to integrate workflows from both the LiveCycle and the SharePoint development perspectives. This module includes a LiveCycle service and a sample SharePoint feature that facilitates end-to-end connection between the two systems.

The service provides search, read, write, delete, update, and check in/out capabilities with a SharePoint repository. SharePoint users can initiate LiveCycle processes such as an approval process from within SharePoint, convert documents to Adobe PDF, and manage the rights on a file in PDF or native formats. In addition, from within the SharePoint context, you can automate running LiveCycle processes from within SharePoint workflows.

11.1 Installation and configuration

After you configured the LiveCycle installation, carry out the following steps to configure the connector on the SharePoint server.

11.1.1 System requirements for the SharePoint server

Ensure that your server that runs the SharePoint site meets the following requirements:

- Microsoft SharePoint Server 2007, 2010, or 2013
- Microsoft .NET Framework 3.5

11.1.2 Installation considerations

Keep in mind the following before you plan your installation:

- If you are using Microsoft SharePoint Server 2007, the installation process stops and restarts the Windows IIS Server when installing Connector for Microsoft SharePoint on the SharePoint server.
- Before you run the installation, ensure that none of the other sites or web applications is using services on the IIS Server. Consult your IIS Administrator before you proceed with the installation.
- (For Sharepoint server 2010 Farmed installation) The SharePoint administration service is running on the centeral adminstration server of sharepoint server Farm. (For Sharepoint server 2010 Standalone installation) The SharePoint administration service is stopped on the sharepoint server.

11.2 Installation and configuration on the SharePoint server 2007

11.2.1 Extract the web part installer

When you installed the LiveCycle server, the web part installer for SharePoint server named `Adobe LiveCycle Connector-2007.zip` was created in the *[LiveCycle root]*\plugins\sharepoint folder. Copy this file to a folder on the Windows server that hosts SharePoint, and then extract the files.

11.2.2 Edit the batch file

The folder extracted from the web part installer contains a batch file named `Install.bat`. You must update this batch file with the file and folder paths relevant to your SharePoint server.

1 Open the `Install.bat` file in a text editor.

2 Locate the following lines in the file and change them:

```
@SET GACUTILEXE="C:\Program Files\Microsoft SDKs\Windows\v6.0A\Bin\ gacutil.exe"
@SET TEMPLATEDIR="c:\Program Files\Common Files\Microsoft Shared\ web server
extensions\12\TEMPLATE"
@SET WEBAPPDIR="C:\Inetpub\wwwroot\wss\VirtualDirectories\<port>"
@SET SITEURL="http://<SharePoint Server>:<port>/SiteDirectory/<site name>/"
@SET STSADM="C:\Program Files\Common Files\Microsoft Shared\ web server
extensions\12\bin\stsadm.exe"
```

- *GACUTILEXE:* Change the path to the folder where the GAC utility is located.
- *TEMPLATEDIR:* Change the template directory path of the IIS Server on your system.
- *WEBAPPDIR:* Change the path of the WEBAPPDIR of the IIS Server on your system if it differs from the default value included in the batch file.
- *SITEURL:* Change the URL of the SharePoint site on your system on which you want to activate the LiveCycle feature.
- *STSADM*: Change the path to the folder where the STSADM utility is located.

Note: *The LiveCycle feature is installed on a web application on the SharePoint server. The LiveCycle feature will be activated only on the site that you have provided the site URL for. You can activate the LiveCycle feature for other SharePoint sites later from the Site Settings page of those sites. See SharePoint Help for more information.*

3 Save and close the file.

11.2.3 Run the batch file

Navigate to the folder where the edited batch file is present, and then run the `Install.bat` file.

Keep in mind that the SharePoint site will be unavailable for other services during the time the batch file runs.

When you run the batch file, the following occur:

- Registers the `AdobeLiveCycleConnector.dll` and `AdobeLiveCycleWorkflow.dll` files. These dynamic libraries integrate the LiveCycle features with the SharePoint server.
- Uninstalls any previously installed SharePoint connector.
- Copies the template files to the *WSS \TEMPLATE* directory.

- Copies the resource files to *WEBAPPDIR\App_GlobalResources* directory.
- Installs and activates the LiveCycle features with web server extensions.
- Closes the installer and returns the prompt.

11.2.4 Copy the Service Model configuration to the IIS Web Application folder

You must copy the SharePoint Connector-specific configuration settings to the web application home directory of the IIS Server. This adds the LiveCycle feature to the web application.

1. Navigate to the *sharepoint-webpart* folder that was created when you extracted the LiveCycle feature installer.
2. Open the `AdobeLiveCycleConnector.dll.config` file in a text editor.
3. Copy the contents between `<system.serviceModel>` and `</system.serviceModel>` tags (including both the starting and ending tags), and then close the file.
4. Navigate to the web application home directory on the IIS Service on your computer that you specified in the batch file. Typically, the folder is `C:\Inetpub\wwwroot\wss\VirtualDirectories\<port>`.
5. Create a backup copy of the `web.config` file and then open the original file in a text editor.
6. Append the contents that you copied before the `</configuration>` tag.
7. Save and close the file.

11.3 Installation and configuration on the SharePoint server 2010 and SharePoint server 2013

11.3.1 Edit Environment Variables

Append path of stsadm.exe to PATH environment variable. The default path of stsadm.exe is `C:\Program Files\Common Files\MicrosoftShared\Web Server Extensions\14\BIN`.

11.3.2 Extract the web part installer

When you installed the LiveCycle server, the web part installer for SharePoint server files named `Adobe LiveCycle Connector-2010.zip` and `Adobe LiveCycle Connector-2013.zip` are created in the [LiveCycle root]\plugins\sharepoint folder.

- If you are using Microsoft SharePoint 2010, copy file `Adobe LiveCycle Connector-2010.zip` to a folder on the Windows server that hosts SharePoint, and then extract the copied file.
- If you are using Microsoft SharePoint 2013, copy file `Adobe LiveCycle Connector-2013.zip` to a folder on the Windows server that hosts SharePoint, and then extract the copied file.

11.3.3 Install and Activate Connector

1. If your old LiveCycle setup had SharePoint Connector installed, perform the following commands in the listed order to uninstall the old SharePoint Connector:

```
install.bat -uninstall
install.bat -retract
install.bat -delete.
```

2 (Optional)Select options for SharePoint Server Context menu before installing connector. See "11.3.4 Enable/Disable features" on page 76 for detailed steps.

3 Run following commands in the listed order to install Connector for SharePoint Server. Ensure that you run `stsadm - o enumsolutions` after each command to verify that the changes have been the propagated to all the servers.

Run `stsadm - o enumsolutions` repeatedly, until the resultant xml contains `<state>pending</state>` tag.

```
install.bat -create
install.bat -add
install.bat -deploy
install.bat -install
```

Note: *For the install.bat -deploy command, run stsadm - o enumsolutions repeatedly, until the resultant xml contains <LastOperationResult>DeploymentSucceeded</LastOperationResult> tag.*

4 Activate the connector from SharePoint Web Application. To activate the connector:

a Open SharePoint Web Application in a browser.

b Click **Site Settings**.

c Click **Site Collection Features.**

d Click Activate for **Adobe LiveCycle Connector** and **Adobe LiveCycle Workflow** feature.

11.3.4 Enable/Disable features

You can change options of context menu and disable other features on SharePoint Sites. For the Sharepoint Connector installed with default set of options, following options are enabled on SharePoint Server:

- Convert to Adobe PDF
- Enable for commenting by adobe reader.
- Secure with Adobe Policy.
- Invoke Adobe LiveCycle Processes

You may make changes to `Elements.xml` file to change above options and to enable or disable another features. To make changes to `Elements.xml`

1 Navigate to the folder containing extracted contents of `Adobe LiveCycle Connector-2010.zip` or `Adobe LiveCycle Connector-2013.zip` file.

2 Take backup of Elements.xmlfile. The default location of `Elements.xml` is `< Directory containing Extracted Adobe LiveCycle Connector-2010/2013.zip File >\TEMPLATE\FEATURES\LiveCycle\Elements.xml`

3 Open the `Elements.xml` file in a text editor.

4 Delete or comment the CustomAction elements of features that you want to disable .

Docuent Server feature	CustomAction element ID	Description
Reader Extensions	LiveCycle.ApplyReaderExtensions	Enables Reader Extensions on PDF documents.
Rights Management	LiveCycle.RightsManagement.ApplyPolicyToPdf	Rights-protect PDF documents

	LiveCycle.RightsManagement.ApplyPolicyToDoc	Rights-protect Microsoft Word documents
	LiveCycle.RightsManagement.ApplyPolicyToXls	Rights-protect Microsoft Excel documents
	LiveCycle.RightsManagement.ApplyPolicyToPpt	Rights-protect Microsoft PowerPoint doments
	LiveCycle.RightsManagement.ApplyPolicyToDocx	Rights-protect Microsoft Word documents
	LiveCycle.RightsManagement.ApplyPolicyToXlsx	Rights-protect Microsoft Excel documents
	LiveCycle.RightsManagement.ApplyPolicyToPptx	Rights-protect Microsoft PowerPoint doments
	LiveCycle.RightsManagement.ApplyPolicyToDwg	Rights-protect Microsoft Excel documents
	LiveCycle.RightsManagement.ApplyPolicyToDxf	Rights-protect AutoCAD documents
	LiveCycle.RightsManagement.ApplyPolicyToDwf	Rights-protect AutoCAD documents
PDF Generator	LiveCycle.GeneratePDFFromPdf	Convert a PDF created from an image to a text-based PDF if Standard OCR was used as the file type in Site Settings.
	LiveCycle.GeneratePDFFromDoc	Generate PDF from Microsoft Word documents
	LiveCycle.GeneratePDFFromPs	Generate PDF from PostScript files
	LiveCycle.GeneratePDFFromEps	Generate PDF from EPS documents
	LiveCycle.GeneratePDFFromPrn	Generate PDF from PRN files
	LiveCycle.GeneratePDFFromDocx	Generate PDF from Microsoft Word 2007 documents
	LiveCycle.GeneratePDFFromPpt	Generate PDF from Microsoft PowerPoint documents
	LiveCycle.GeneratePDFFromPptx	Generate PDF from Microsoft PowerPoint documents
	LiveCycle.GeneratePDFFromXls	Generate PDF from Microsoft Excel documents
	LiveCycle.GeneratePDFFromXlsx	Generate PDF from Microsoft Excel documents
	LiveCycle.GeneratePDFFromBmp	Generate PDF from BMP files
	LiveCycle.GeneratePDFFromGif	Generate PDF from GIF files
	LiveCycle.GeneratePDFFromJpeg	Generate PDF from JPEG images
	LiveCycle.GeneratePDFFromJpg	Generate PDF from JPG images
	LiveCycle.GeneratePDFFromTiff	Generate PDF from TIFF images
	LiveCycle.GeneratePDFFromTif	Generate PDF from TIF images

	LiveCycle.GeneratePDFFromPng	Generate PDF from PNG images
	LiveCycle.GeneratePDFFromJpf	Generate PDF from JPF images
	LiveCycle.GeneratePDFFromJpx	Generate PDF from JPX images
	LiveCycle.GeneratePDFFromJp2	Generate PDF from JPEG 2000 images
	LiveCycle.GeneratePDFFromJ2k	Generate PDF from JPEG 2000 images
	LiveCycle.GeneratePDFFromJ2c	Generate PDF from JPEG 2000 images
	LiveCycle.GeneratePDFFromJpc	Generate PDF from JPEG 2000 images
	LiveCycle.GeneratePDFFromHtm	Generate PDF from HTM documents
	LiveCycle.GeneratePDFFromHtml	Generate PDF from HTML documents
	LiveCycle.GeneratePDFFromSwf	Generate PDF from SWF files
	LiveCycle.GeneratePDFFromFlv	Generate PDF from Flash video files
	LiveCycle.GeneratePDFFromTxt	Generate PDF from text files
	LiveCycle.GeneratePDFFromRtf	Generate PDF from Rich Text Format files
	LiveCycle.GeneratePDFFromMpp	Generate PDF from Microsoft Project files
	LiveCycle.GeneratePDFFromPub	Generate PDF from Microsoft Publisher documents
Invoke LiveCycle process	LiveCycle.InvokeGenericLiveCycleProcessOnALL	Invoke LiveCycle Process
Adobe Forms Library	AdobeFormsLibrary	Set up SharePoint as the repository for forms data.Remove the CustomAction, ListTemplate and ListInstance elements.
LiveCycle User Tasks	LiveCycleUserTasks	Lists the user tasks.Remove the ListTemplate element.
LiveCycle Group Tasks	LiveCycleGroupTasks	Lists the group tasks.Remove the ListTemplate element.

5 Save and close `Elements.xml`

11.3.5 Uninstalling Connector for Microsoft SharePoint Server 2010 and Microsoft SharePoint Server 2013

1 Deactivate SharePoint Connector from Shrepoint Web Application. To deactivate SharePoint Connector

a Open SharePoint Web Application in a browser.

b Click **Site Settings**.

c Click **Site Collection Features.**

d Click Deactivate for **Adobe LiveCycle Connector** and **Adobe LiveCycle Workflow** Features

2 On the command prompt, run the following commands in the given order. Ensure that you run `stsadm - o enumsolutions` after each command to verify that the changes have been the propagated to all the servers. Run `stsadm - o enumsolutions` repeatedly, until the resultant xml contains `<state>pending</state>` tag.

```
Install.bat -uninstall
Install.bat -retract
Install.bat -delete
```

Note: *For the Install.bat -retract command, run stsadm - o enumsolutions repeatedly, until the resultant xml contains <LastOperationResult>RetractionSucceeded</LastOperationResult> tag.*